

ILLINOIS STATE BEE-
KEEPERS' ASSOCIATION

REPORT



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1919

Third Annual Report

— OF THE —

Illinois State

Bee-Keepers'

Association



Organized Feb. 26, 1891,

SPRINGFIELD, ILLINOIS.

Compiled by

JAMES A. STONE, Secretary,

R.R. 4, Springfield, Ill.

American Bee Journal Print, Chicago, Ill.

JAN 24 1919

THIRD ANNUAL REPORT

—OF THE—

Illinois State Bee-Keepers' Association

Organized February 26, 1891,

—AT—

SPRINGFIELD, ILL.

COMPILED BY
JAMES A. STONE, SECRETARY,
R. R. 4, Springfield, Ill.

CHICAGO, ILL. :
AMERICAN BEE JOURNAL PRINT,
1904.

LETTER OF TRANSMITTAL.

OFFICE OF THE SECRETARY,
R. R. 4, SPRINGFIELD, ILL., Jan. 25, 1904. }

*To his Excellency, Richard Yates, Governor of the State of
Illinois:*

SIR: I have the honor to transmit herewith the Third
Annual Report of the Illinois State Bee-Keepers' Association.

Respectfully submitted,

JAMES A. STONE, *Secretary.*

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OFFICERS AND MEMBERS

—OF THE—

Illinois State Bee-Keepers' Association

FOR 1904.



OFFICERS.

President—

J. Q. SMITH, Lincoln

Vice-Presidents—

1st— JOHN S. DOWDY, Atlanta

2d— J. W. PRIMM, Springfield

3rd—AARON COPPIN, Wenona

4th—JAS. POINDEXTER, Bloomington

5th—S. N. BLACK, Clayton

Secretary—

JAS. A. STONE, R.R. 4, Springfield

Treasurer—

CHAS. BECKER Pleasant Plains



MEMBERS FOR 1904.

J. Q. Smith, Lincoln.

E. J. Baxter, Nauvoo.

Chas. Becker, Pleasant Plains.

S. T. Crim, Dawson.

Louis Werner, Edwardsville.

D. C. McLeod, Pana.

A. J. Miller, Decatur.

S. N. Black, Clayton.

Jas. A. Stone, Springfield.
George Poindexter, Kenney.
Jas. Poindexter, Bloomington.
John Ostermeyer, Cornland.
Charles Burcham, Mechanicsburg.
Aaron Coppin, Wenona.
Mrs. Aaron Coppin, Wenona.
Miss L. C. Kennedy, Curran.
A. C. Scroggins, Mt. Pulaski.
J. W. Primm, Springfield.
M. H. Lind, Baders, Schuyler Co.
Chas. Haise, Atlanta.
John S. Dowdy, Atlanta.
Chas. B. Achard, Roselle, Du Page Co.
M. Bevier, Bradford.
W. C. Scott, Athens.
Albert Walker, Petersburg.
W. D. Null, La Harpe.
P. J. England, Fancy Prairie.



LIST OF MEMBERS

—OF THE—

Illinois State Bee-Keepers' Association

Who Have Joined Since May 1, 1904.

George W. York, Chicago.
Herman F. Moore, Park Ridge.
C. P. Dadant, Hamilton.
W. H. Stage, Dundee.
John P. N. Rohlinger, Linn Creek, Mo.
Arthur Lee, Rt. 2, Rockton.
Peter Blunier, Roanoke.
Rev. Chas. Horack, Streator.
W. A. Homan, 1129 N. 6th St., Quincy.
John T. Schoon, 602 S. Cottage Grove
Ave., Urbana.
A. Y. Baldwin, DeKalb.
Fred Tyler, San Jose.
Ramy Johnston, Graymont.
A. I. Emmons, Greenfield.
W. G. Secor, Greenfield.
M. M. Martin, Caledonia.
H. S. Seymour, Sugar Grove.
Andrew Leiker, Haffs Ave., Joliet.
Thos. F. Hallovan, Reddick.
H. J. Duffy, Sheridan.
B. L. Deem, Colona Station.
Wm. Helphrey, Argenta.
H. P. Procise, Chrisman.
C. Zoll, Vermont.
A. S. Crotzer, Lena.
John S. Hays, Macomb.
Jas. Gamash, Waukegan.
N. P. Whitmore, Gardner.
Fred A. Meise, Coatsburg.
T. R. Ricker, Cortland.
F. M. Wagner, Rt. 4, Quincy.

J. M. Robinson, Rt. 1, Neponset.
Dr. B. T. Emigh, 218 Coulter Block,
Aurora.
W. Riley, Breeds.
B. F. Collins, Chenoa.
Wm. Glasser, Dakota.
W. B. Moore, Alton.
Mike D. Mohr, Hampton.
R. Bolt, Fulton.
A. A. Snethen, Pontiac.
Hugo Zachgo, Rt. 2, Danforth.
W. C. Keeler, 629 Oak St., DeKalb.
Arthur Stanley, Rt. 4, Dixon.
Allen Karns, Dawson.
Thos. M. Cherry, Quincy.
Mrs. H. W. Bartrum, Rt. 1, Newark.
Peter J. Norberg, Spring Valley.
P. D. Wakeland, Hoopeston.
Hugh B. Campbell, 706 Ogden St., Ur-
bana.
D. W. McDaniel, Hamilton.
Almond Bros., Libertyville.
J. G. Sexton, Snyder.
Albert Boyd, Gays.
P. B. Thaxton, Glasgow.
J. T. Raftery, El Dara.
Edward L. Rillebrew, Winchester.
A. J. Siebold, Seneca.
Mrs. N. L. Stow, 944 Ashland Ave.,
Evanston.
M. J. White, Lorretto.
L. L. Ness, Morris.
M. B. Ewing, 763 Hais Ave., DeKalb.
Thos. Dougherty, N. Sta., Princeton.
D. P. Earnest, Comstock.
L. A. Cameron, Rt. 1, Hoopeston.
B. R. Longwell, Rochelle.
Fred Steinmetz, Bunker Hill.
John Nydegger, Box 164, Danville.
M. E. Mills, Cerro Gordo.
H. T. Hagler, Virden.

State of Illinois—Department of State.

ISAAC N. PEARSON, Secretary of State.

To all to whom these Presents shall come, Greeting:

WHEREAS, A certificate duly signed and acknowledged having been filed in the office of the Secretary of State on the 27th day of February, A. D. 1891, for the organization of the Illinois State Bee-Keepers' Association, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereunto attached.

NOW, THEREFORE, I, Isaac N. Pearson, Secretary of State, of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said, The Illinois State Bee-Keepers' Association is a legally organized corporation under the laws of this State.

In Testimony Whereof, I hereunto set my hand, and cause to be affixed the great seal of State.

Done at the City of Springfield this 27th day of February, in the year of our Lord, one thousand
[SEAL] eight hundred and ninety-one, and the Independence of the United States the one hundred and fifteenth.

I. N. PEARSON,
Secretary of State.

STATE OF ILLINOIS,
SANGAMON COUNTY.

ss.

To Isaac N. Pearson, Secretary of State:

We, the undersigned, Perry J. England, Jas. A. Stone and Albert N. Draper, citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled, "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and for the purposes of such organizations, we hereby state as follows, to-wit:

1. The name of such corporation is, The Illinois State Bee-Keepers' Association.
2. The object for which it is formed is, to promote the general interests of the pursuit of bee-culture.
3. The management of the aforesaid Association shall be vested in a board of three Directors who are to be elected annually.
4. The following persons are hereby selected as the

Directors, to control and manage said corporation for the first year of its corporate existence, viz: Perry J. England, Jas. A. Stone and Albert N. Draper.

5. The location is in Springfield, in the County of Sangamon, State of Illinois. [Signed,]

PERRY J. ENGLAND,
JAS. A. STONE,
ALBERT N. DRAPER.

STATE OF ILLINOIS,
COUNTY OF SANGAMON.

ss.

I, S. Mendenhall, a notary public in and for the county and State aforesaid, do hereby certify that on this 26th day of February, A. D. 1891, personally appeared before me, Perry J. England, James A. Stone and Albert N. Draper, to me personally known to be the same persons who executed the foregoing certificate, and severally acknowledged that they had executed the same for the purposes therein set forth.

In Witness Whereof, I have hereunto set my hand and seal the day and year, above written.

[SEAL]

S. MENDENHALL,
Notary Public.



CONSTITUTION AND BY-LAWS
—OF THE—
Illinois State Bee-Keepers' Association

CONSTITUTION,

Adopted Feb. 26, 1891.

ARTICLE I—*Name.*

This organization shall be known as the Illinois State Bee-Keepers' Association, and its principal place of business shall be at Springfield, Ill.

ARTICLE II—*Object.*

Its object shall be to promote the general interests of the pursuit of Bee Culture.

ARTICLE III—*Membership.*

SEC. 1. Any person interested in Apiculture may become a member upon the payment to the Secretary of an annual fee of one dollar (\$1.00).

SEC. 2. Any persons may become honorary members by receiving a majority vote at any regular meeting.

ARTICLE IV—*Officers.*

SEC. 1. The officers of this Association shall be: President, five Vice-Presidents, Secretary and Treasurer. Their terms of office shall be for one year, or until their successors are elected and qualified.

SEC. 2. The President, Secretary and Treasurer shall constitute the Executive Committee.

SEC. 3. Vacancies in office—by death, resignation or otherwise—shall be filled by the Executive Committee until the next annual meeting.

ARTICLE V—*Amendments.*

This Constitution may be amended at any annual meeting by a two-thirds vote of all the members present—thirty days' notice having been given to each member of the Association.

BY-LAWS,

Adopted December 18, 1891.

ARTICLE I.

The officers of this Association shall be elected by ballot and by a majority vote.

ARTICLE II.

It shall be the duty of the President to call and preserve order at all meetings of this Association; to call for all reports of officers and committees; to put to vote all motions regularly seconded, to count the votes at all elections and declare the results; to decide upon all questions of order; and to deliver an address at each annual meeting.

ARTICLE III.

The Vice-Presidents shall be numbered respectively, First, Second, Third, Fourth and Fifth, and it shall be the duty of one of them in his respective order to preside in the absence of the President.

ARTICLE IV.

SEC. 1. It shall be the duty of the Secretary to report all proceedings of the Association, and to record the same, when approved, in the Secretary's book; to conduct all correspondence of the Association, and to file and preserve all papers belonging to the same; to receive the annual dues and pay them over to the Treasurer, taking his receipt for the same; to take and record the name and address of every member of the Association; to cause the Constitution and By-Laws to be printed in appropriate form, and in such quantities as may be directed by the Executive Committee from time to time, and see that each member is provided with a copy thereof; to make out and publish annually, as far as practicable, statistical table showing the number of colonies owned in the spring and fall, and the amount of honey and wax produced by each member, together with such other information as may be deemed important, or be directed by the Executive Committee; and to give notice of all meetings of the Association in the leading papers of the State and in the bee journals at least four weeks prior to the time of such meeting.

SEC. 2. The Secretary shall be allowed a reasonable compensation for his services, and to appoint an assistant Secretary if deemed necessary.

ARTICLE V.

It shall be the duty of the Treasurer to take charge of all funds of the Association, and to pay them out upon the order of the Executive Committee, taking a receipt for the same; and to render a report of all receipts and expenditures at each annual meeting.

ARTICLE VI.

It shall be the duty of the Executive Committee to select subjects for discussion and appoint members to deliver addresses or read essays, and to transact all interim business.

ARTICLE VII.

The meetings of the Association shall be, as far as practicable, governed by the following order of business:

- Call to order.
- Reading minutes of last meeting.
- President's address.
- Secretary's report.
- Treasurer's report.
- Reports of committees.
- Unfinished business.
- Reception of members and collection.
- Miscellaneous business.
- Election and installation of officers.
- Discussion.
- Adjournment.

ARTICLE VIII.

These By-Laws may be amended by a two-thirds vote of all the members present at any annual meeting.

C. E. YOCOM,
AARON COPPIN,
GEO. F. ROBBINS.



Formation of the Illinois State Bee-Keepers' Association.

SPRINGFIELD, ILL., Feb. 26, 1891.

The Capitol Bee-Keepers' Association was called to order by President P. J. England.

Previous notice having been given that an effort would be made to form a State Association, and there being present bee-keepers from different parts of the State, by motion, a recess was taken in order to form such an Association.

P. J. England was chosen temporary chairman, and C. E. Yocom temporary secretary. On motion, the Chair appointed Thos. G. Newman, C. P. Dadant and Hon. J. M. Hambaugh a committee on constitution.

Col. Chas. F. Mills addressed the meeting on the needs of a State Association, and stated that it was his opinion that the bee-keepers should have a liberal appropriation for a State Apiarian Exhibit at the World's Columbian Exposition.

A motion to adjourn till 1:30 P. M. prevailed.

AFTERNOON SESSION.

The Committee on Constitution reported a form for same, which, on motion, was read by the Secretary, by sections serially.

Geo. F. Robbins moved to substitute the word *shall* for *may* in the last clause of Section 1, Article III. This led to a very animated discussion, and the motion was lost.

J. A. Stone moved to amend the above-named section by striking out the word *ladies* and all that followed of the same section, which motion led to further discussion and motion finally prevailed.

Section 2, Article III, relating to a quorum, was, on motion, entirely stricken out.

Mr. Robbins moved to amend Article V by adding the words, "Thirty days' notice having been given to each member." Prevalled.


Thos. G. Newman moved to adopt the Constitution, so amended, as a whole. Which motion prevailed.

See Constitution, page 8.

J. A. Stone moved that the Chair appoint a nominating committee of three on permanent organization. Prevalled.

Chair appointed as such committee, Col. Chas. F. Mills, Hon. J. M. Hambaugh, and C. P. Dadant.

Committee retired and in a few minutes returned, submitting the following named persons as candidates for their respective offices:



For President—P. J. England, Fancy Prairie.

For Vice-Presidents—Mrs. L. Harrison, Peoria; C. P. Dadant, Hamilton; W. T. F. Petty, Pittsfield; Hon. J. M. Hambaugh, Spring; Dr. C. C. Miller, Marengo.

Secretary—Jas. A. Stone, Bradfordton.

Treasurer—A. N. Draper, Upper Alton.

Mr. Black moved the adoption of the report of the committee on nominations. The motion prevailed, and the officers as named by the committee, were declared elected for the ensuing year.

Hon. J. M. Hambaugh moved that Mr. Thos. G. Newman, Editor American Bee Journal, of Chicago, be made the first honorary member of the Association. Prevailed.

At this point Col. Chas. F. Mills said, "Mr. Chairman, I want to be the first one to pay my dollar for membership," at the same time suiting his actions to his words, and others followed his example, as follows:

CHARTER MEMBERS.

Col. Chas. F. Mills, Springfield.	Aaron Coppin, Wenona.
Hon. J. M. Hambaugh, Spring.	Geo. F. Robbins, Mechanicsb'g.
Hon. J. S. Lyman, Farmingdale.	J. W. Yocom, Williamsville.
C. P. Dadant, Hamilton.	Thos. S. Wallace, Clayton.
Chas. Dadant, Hamilton.	A. J. England, Fancy Prairie.
A. N. Draper, Upper Alton.	P. J. England, Fancy Prairie.
S. N. Black, Clayton.	C. E. Yocom, Sherman.
Jas. A. Stone, Bradfordton.	

FIRST HONORARY MEMBER.

Thos. G. Newman, Editor American Bee Journal, Chicago.



Bee-Keepers' Association.

PREAMBLE.

§ 1. For expenses of annual meetings, per annum, \$1,000; officers to receive no salary.

§ 2. How drawn.

§ 3. Duty of Treasurer of Association.

Approved May 15, 1903.

A BILL

An Act making an appropriation for the Illinois State Bee-Keepers' Association.

WHEREAS, The members of the Illinois State Bee-Keepers' Association have for years given much time and labor without compensation in the endeavor to promote the interests of the bee-keepers of the State; and,

WHEREAS, The importance of the industry to the farmers and fruit growers of the State warrants the expenditure of a reasonable sum for the holding of annual meetings, the publication of reports and papers containing practical information concerning bee-keeping, therefore to sustain the same and enable this organization to defray the expenses of annual meetings, publishing reports, suppressing foul brood among bees in the State, and promote this industry in Illinois:

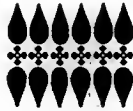
SECTION 1. *Be it enacted by the People of the State of Illinois represented in the General Assembly:* That there be and is hereby appropriated for the use of the Illinois State Bee-Keepers' Association the sum of one thousand dollars (\$1,000) per annum for the years 1903 and 1904, for the purpose of advancing the growth and developing the interests of the bee-keepers of Illinois, said sum to be expended under the direction of the Illinois State Bee-Keepers' Association for the purpose of paying the expenses of holding annual meetings, publishing the proceedings of said meetings, suppressing foul brood among bees in Illinois, etc.

Provided, however, That no officer or officers of the Illinois State Bee-Keepers' Association shall be entitled to receive any money compensation whatever for any services rendered for same.

Section 2. That on the order of the president, countersigned by the secretary of the Illinois State Bee-Keepers' Association, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasurer of the Illinois Bee-Keepers' Association for the sum herein appropriated.

Section 3. It shall be the duty of the treasurer of the Illinois State Bee-Keepers' Association to pay out of said appropriation, on itemized and receipted vouchers, such sums as may be authorized by vote of said organization on the order of the president, countersigned by the secretary, and make annual report to the Governor of all such expenditures, as provided by law.

Approved, May 15, 1903.



➤ REPORT ➤

—OF THE—

Illinois State Bee-Keepers' Association

SPRINGFIELD, ILL., June 18, 1903.

Due notice having been given, the Illinois State Bee-Keepers' Association met in Room 17 of the State House, at the call of the President, for the purpose of electing a Foul Brood Inspector for the State of Illinois, for the years 1903 and 1904; and to transact such other business as might come before the meeting.

The meeting was called to order, with Pres. Crim in the chair.

Mr. Crim nominated Mr. J. Q. Smith, of Lincoln, to fill the office of Foul Brood Inspector for Illinois for the two years named in the call, viz.: 1903 and 1904. Mr. Crim put the question, which was carried unanimously.

By a vote it was recommended that the Inspector be allowed four dollars (\$4.00) per day and his expenses, for time actually and necessarily spent in carrying out the intent of the law.

The Association favored our joining the National Bee-Keepers' Association in a body, if such arrangements could be made.

Adjourned.

JAS. A. STONE, Sec.

REPORT OF THE ANNUAL STATE CONVENTION.

The 13th annual session of the Illinois State Bee-Keepers' Association met at the State House on Nov. 17, 1903, for a two days' session.

Called to order with Pres. Smith in the chair. The forenoon session was passed in getting acquainted with one another. A motion was carried that the chairman appoint a committee of three on Resolutions, and a recess was taken till 1:30 p.m.

At 1:30 p.m. the meeting was called to order, with Pres. Smith in the chair.

The President named the Committee on Resolutions as follows: Jas. A. Stone, S. N. Black, and E. J. Baxter.

The Secretary made a verbal report of the numerous efforts the Legislative Committee had made in the last decade to secure laws opposed to the adulteration of honey and other foods; against spraying of fruit-trees while in bloom with poisonous liquids; and of the continuous efforts they had made to secure a foul brood law, until they finally succeeded, by their persistent efforts and the valuable assistance of the

Chicago-Northwestern, the American Bee Journal, and many of the bee-keepers of the State, in securing the present law that was placed on our statute books by the last legislature.

The Secretary reported in the same manner what had been done by the Premium-List Committee in securing a premium list from the State Board of Agriculture, which has given us a list which we think is second to none in the United States, unless it be those that have it given to their States only. We think ours should be limited to the State only, and it would result in larger and finer exhibits. We are very much indebted to H. J. Cater, Superintendent of the Apiarian Department at the Fair, for the liberality of our premium list, and for the care he has taken to see that we were fairly treated as exhibitors and visitors at the State Fair.

The Secretary also reported that Superintendent of Agriculture for Illinois at the Louisiana Purchase Exposition—Will B. Otwell—was in correspondence with us, and was desirous that our Association make an exhibit at the said World's Fair, similar to the one made by the same at the Columbian World's Fair.

On motion by Mr. Becker, it was ordered that an exhibit be made if the Commission would give the same amount that our State gave the Association for the Columbian Exposition, viz.: (\$3500) three thousand five hundred dollars, and that the Executive Committee have charge of the correspondence, and of the whole matter pertaining to the exhibit in case one be made.

The Association voted to complete the arrangement, partially made at the last called meeting, whereby 50 cents from each membership fee be paid for one year's membership in the National Bee-Keepers' Association.

The treasurer's report was read as follows:

PLEASANT PLAINS, ILL., Nov. 16, 1903.

Treasurer's Report of the Illinois State Bee-Keepers' Association, July 13, 1903—

Received of State Treasurer.....	\$1000
Paid on order No. 1, to State Inspector.....	\$ 75 00
“ “ 2, “ “	31 10

Total paid	\$106 10
Balance on hand at this date	893 90 \$1000

CHAS. BECKER, *Treas.*

QUESTION-BOX—REARING QUEENS.

Mr. Crim—What is the best plan for rearing queens for our own use?

Pres. Smith—Take your best queen away from her hive, then after a number of queen-cells have been sealed, form nuclei and place the combs containing these queen-cells in them.

Mr. Black—The most satisfactory way I have ever tried has been to select the colony, or colonies, from which I wish to rear queens, stimulate early by feeding until the colony is well provided with eggs and brood, then take the queen from the colony, and introduce her into some colony where you wish to requeen. The colony made queenless will form numerous

queen-cells, and when the queen-cells are capped take a frame with queen-cell to be substituted for a frame in the colony you wish to requeen. To be sure they may not destroy the queen-cells so substituted, have an empty hive, take out all the frames and place in it, and while so doing catch the queen and pinch off her head. Then shake all the bees onto the ground two or three feet from the old hive and replace the frames, including the one that has the queen-cell, in the old hive, allowing the bees to run into the old hive; close up, and the work is done. In case of more than one queen-cell on the frame, they can be placed in other hives in the same manner, by cutting out and inserting in the frames of the hive. In this way you can treat as many colonies as you have queen-cells. By using drone-traps, drones from objectionable colonies may be caught.

Mr. Smith—My plan is to select the best honey-gatherers, and of the gentlest disposition. Stimulate during fruit-bloom. As soon as the first swarm issues from it, exchange hives with the next strongest one; in this way you add to hive No. 1 all the field-bees from the strong swarm, and in a few days the young queens will issue from hive No. 1 with a prime swarm. As soon as possible change the place of hive No. 1 a second time with another strong colony, and continue this procedure as long as you hear piping, or at least three colonies may be requeened from each select colony with virgin queens from prime colonies.

BEGINNING WORK ON WHITE CLOVER.

Mr. Primm—How early can we expect our bees to begin work on white clover?

Mr. Baxter—Bees seldom store honey from white clover earlier than June 10.

Mr. Becker—I have known of bees storing an abundance of honey from white clover as early as May 20.

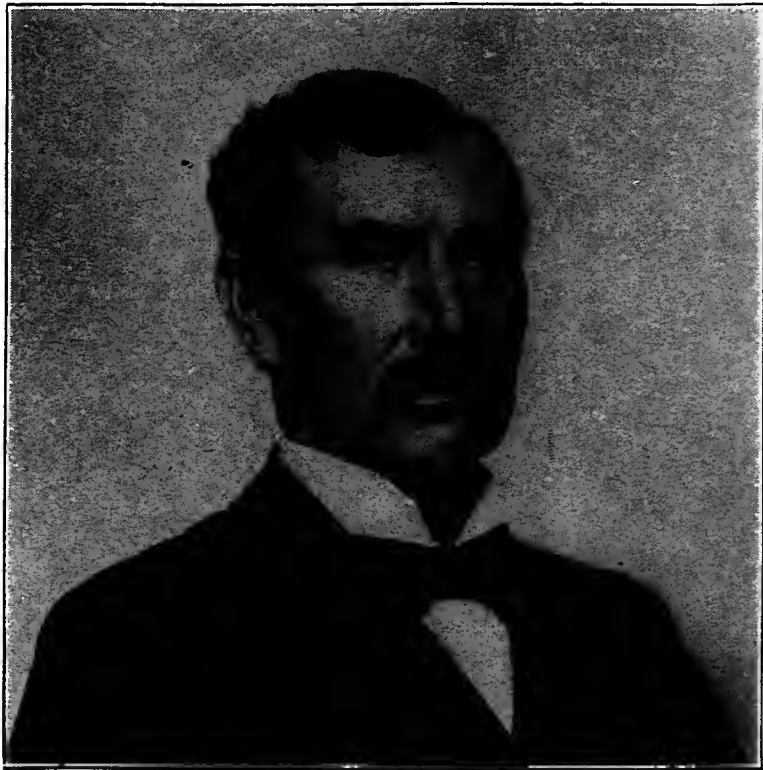
INFALLIBLE METHOD OF INTRODUCING QUEENS.

James Poindexter—When we say infallible, we mean that with us it has been an unailing process, when practiced during the past 12 or 15 years, and shall claim the right to use the above heading, until at least we meet with one failure.

While we have not used the method exclusively, yet it has been a success under very unfavorable conditions, such as when colonies had been queenless for weeks, and in a few instances laying workers were present in the hive when the queen was released, and in times when honey was scarce and robber-bees were plentiful. Also, it has been a success when other methods tried on obstinate colonies failed. We will say, however, that we did not give Dr. Miller's method of introduction by baptism a trial.

The success of the method is based on the principle that animals, as a rule, are less belligerent, and more amiable with a full stomach than otherwise. The genus homo and the honey-bee being no exceptions.

Our way of operation is this: First see that the colony is queenless, and has plenty of honey for the bees to fill themselves with. Then get all the bees possible inside, close the



J. Q. SMITH, President,
Illinois State Bee-Keepers' Association.

hive bee-tight, with proper ventilation; cause the bees to fill themselves by smoking and jarring the hive. This last I do by putting a thin strip under the bottom-board, so as to balance the hive, and vibrate it back and forth. This is done for 15 minutes or more; if there is no unsealed honey it requires longer.

Now see that the queen and attendants have had a good square meal, and make an opening at the entrance, side or top of hive, and cause the queen and escort to run in, smoking slightly. Close up the hive and continue the jarring for half an hour longer. This is for the purpose of having queen and bees become thoroughly assimilated in actions and scent.

The hive is now left till dark before opening. They are generally left at least two hours, and sometimes all night before opening. The object of leaving till dark is that the bees may have a time undisturbed to resume a normal condition, and robber-bees take no part whatever in the operation.

Secretary Stone—I have never tried introducing queens in the fall of the year, or when there were robber-bees abroad, but once. I bought two very fine golden Italian queens at the State Fair the first of October, in one-frame observatory hives. I attempted, the first week in October, to introduce them. I selected the two colonies I wished to requeen, opened the hive of one, and began search for the queen. By the time I had removed about three frames, the robber-bees came so thick I was compelled to hustle them back. Having no be-tent, I carried the hive into the honey-house, and just inside the screen-door. I removed all the frames into a box used for the purpose, and did not find the queen till emptying out the remaining bees. I then caged the golden Italian, and brushed the bees from her frame on the tops of frames in the box. Some of her bees flew to the screen door that was covered with bees from the hive, and the others settled with the bees in the box. I then removed the frames from the box to their hive, brushed back all loose bees from the box, screen doors and windows, and placed the caged queen between the tops of the frames, with the cage entrance closed by honey from the hive; moved the hive to the old stand, and left it closed with wire-screen till after dark.

I went through the same process with the second golden Italian queen, and the only afterthought given them was anxiety to know as to my success. The little slates that lie on top of these two hives are marked thus:

“March 13th [the spring following], an occasional Gold. It. can be seen. May 1st not a black bee left.”

REPORT OF COMMITTEE ON RESOLUTIONS.

The chairman of the Committee on Resolutions reported the following resolutions:

WHEREAS, The Illinois State Bee-Keepers' Association was instrumental in securing a foul brood law for the benefit of the bee-keepers of the State at the last session of the General Assembly; and,

WHEREAS, Our sister associations, and especially the



JAS. A. STONE, Secretary,
Illinois State Bee-Keepers' Association.

Chicago-Northwestern, were very helpful in obtaining the same; and,

WHEREAS, We believe that greater benefits will result to members of the different associations of the State by a union of the several societies; therefore, be it

Resolved, That members of other bee-keepers' organizations of the State be allowed membership in the State association, through their secretaries, upon payment of 25 cents per member.

The above was signed by the chairman of the committee, one member absent, and the third moved that it be laid over to the next annual meeting, which motion prevailed.

REPORT OF FOUL BROOD INSPECTOR.

Mr. Becker—We would like to hear a report from our foul brood inspector.

Mr. Smith—I traveled 3000 miles, and visited 30 apiaries. Bee-keepers in the north part of the State all have the large Danzenbaker hives; in the south part of the State they have old-fashioned hives, but they all take the American Bee Journal. In the north part they raise a great many cucumbers, lots of white and sweet clover, among the shaly hills. I ran across one man who had about 100 colonies of bees in cracker-boxes, and all kinds of traps for his bees. He had bees and honey enough to be worth at least \$1000, and I venture he could not get \$100 worth into shape for market. He had one barrel that had been used to pick chickens in. This man was in the central part of the State, and he did not take a bee-paper, nor could he be induced to join any association.

PROVIDING BEE-SUPPLIES A YEAR IN ADVANCE.

Mr. Becker—Is it best to provide a year beforehand for bee-supplies?

Mr. Baxter—It is not a wise plan to provide beforehand for your bees unless a prospect for honey offers. I will provide for next year, and make arrangements for a big honey crop, till I see white clover killed in the spring. I have never seen, till this year, the clover yield with a northwest, north, or northeast wind. This year the bees stored it with all kinds of winds.

TAKING OFF COMB HONEY.

Mr. Becker—When is the proper time to take off comb honey?

Mr. Crim—I take it off as soon as filled, and put it upstairs in a warm, dry room, tiered up.

Mr. Becker—That will do in this part of the country, but up on the Illinois River the moths seem to be in it when it is taken off.

REQUEENING COLONIES.

Mr. Miller—How shall we requeen our colonies?

Pres. Smith—When possible requeen from your own best queens. If you have none good enough be sure to send to some bee-keeper that is responsible. One year I had 30



CHAS. BECKER, Treasurer,
Illinois State Bee-Keepers' Association.

queens from a queen-breeder, got foul brood, and others who had queens from the same place also got it.

GETTING SWEET CLOVER SEED STARTED.

Mr. Dowdy—How is the best way to get sweet clover seed started?

Geo. Poindexter—The best way I have ever tried is to skim off the surface of the ground where sweet clover has seeded, and scatter it where you want it to grow. Any time in the fall of the year.

Secretary Stone made a statement of what Prof. Hopkins, of the Illinois University, said at the Sangamon County Farmers' Institute, in Mechanicsburg, in October last. He said: "Three-fourths of the air being nitrogen made 12 pounds of same to every square inch of the earth's surface. He told the boys if they would figure that up they would find the value of the nitrogen about one acre of ground to be a great many millions of dollars. As nitrogen is the principal element that enters into all the plant food, the great source of wealth is to find out the way to get this nitrogen out of the air into the soil. It has been discovered that leguminous plants have bacteria living on their roots that feed upon and bring the nitrogen from the air into the soil, so that plants can feed upon it. The clovers all have these bacteria on their roots, unless it be in soils that are too acid for them to thrive, in which case the clovers will not succeed. It has been discovered that *sweet clover always has abundance of these bacteria, and therefore is as great a fertilizer as we can get*, for the reason that it causes such great quantities of nitrogen to come into the soil, which accounts for its making such rapid growth in any kind of soil."

He added that, "where the bacteria is not in the soil, it must be sown, or alfalfa will not succeed."

DRONE FROM A LAYING WORKER.

Pres. Smith—Can a drone from a laying worker fertilize a queen?

No answer.

EIGHT FRAMES IN A 10-FRAME HIVE.

Secretary Stone—Is it better to put only 8 frames in a 10-frame hive for extracting? Will they be as evenly surfaced?

Mr. Becker—Yes.

No one else seemed to have tried it?

DRONE-TRAPS.

Mr. Crim—Is it best to use drone-traps?

Some said yes, and some had not tried them. One said, "Keep bantam chickens and they would eat the drones."

Secretary Stone—I never had as good success in Italianizing as when I used drone-traps.

FULL SHEETS IN SECTIONS.

Jas. Poindexter—What percent of gain is there in using full sheets of foundation?

Mr. Black—I put into some hives about one-half of each and they were all filled about the same time.

Secretary Stone—I once sold some section honey to a grocer, who said, "I don't want any more of Mr. —'s honey; it seemed to have a tough center, and some of my customers brought it back."

Adjourned to 10 o'clock the next day.

SECOND DAY.

The meeting was called to order at 10 o'clock a.m., Nov. 18, with Pres. Smith in the chair.

INTRODUCING QUEENS.

This question was again brought up and discussed as to best manner of introducing queens. It was agreed that in cases of the most difficult kind, when a laying worker is present, the safest way to proceed is to dump all the bees on the ground two or three feet from the hive, and in their mixed-up condition they seem to take up with their new queen.

GETTING BEES OUT OF SUPERS.

Mr. Crim—What is the best method for getting bees out of supers without the use of escapes?

Pres. Smith—I place the supers in a box, leave a small hole in the cover, and the bees come to the light and get out.

Secretary Stone—I tried this plan once and bees began to rob, so I made a box with a tight cover, in which I made two holes, and over them placed a cone of wire-cloth, and it worked all right.

GETTING RID OF ANTS.

Mr. Primm—How do you get rid of ants?

Pres. Smith—Sprinkle powdered borax, or gasoline, around where ants (or roaches) are.

Secretary Stone—I use crude carbolic acid, diluted 20 times.

KEEPING COMB HONEY FROM CANDYING.

Mr. Miller—How long can I keep my comb honey without candying?

Pres. Smith—Keep it in a warm room, and it will keep indefinitely.

All agreed.

On motion, adjourned until 1 o'clock.

Called to order at 1 p.m., pursuant to adjournment, with Pres. Smith in the chair.

On motion, proceeded to the election of officers.

On motion of Mr. Black, the Secretary was instructed to cast the ballot for J. Q. Smith for president for the ensuing year.

Proceeded to ballot for five vice-presidents with the following result:

First Vice-President, John S. Dowdy; 2d, J. W. Primm; 3d, Aaron Coppin; 4th, James Poindexter; 5th, S. N. Black.

Motion prevailed instructing the President to cast the ballot for Jas. A. Stone for secretary.

On motion, the Secretary was instructed to cast the ballot for Chas. Becker for treasurer.

Mr. Becker moved that a committee of three be appointed by the chairman to arrange a program for the next annual meeting. Motion prevailed.

The chair appointed the following committee: J. W. Primm, S. N. Black, and Aaron Coppin.

On motion of Mr. Black, the Executive Committee was given charge of the publishing of the report of our meetings of the Association.

Pres. Smith left, and Vice-Pres. Dowdy took the chair.

Mr. Becker—I think we ought to have assistant foul brood inspectors in different parts of the State, so as to curtail the expense of railroad fare.

Mr. Primm moved that the Executive Committee be empowered to appoint assistant foul brood inspectors in the different divisions of the State.

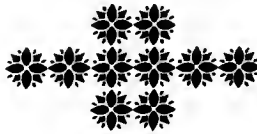
Motion prevailed.

On motion, adjourned *sine die*.

JAS. A. STONE, Sec.

At the close of the meeting the Secretary forwarded all the names of the members to the National Bee-Keepers' Association, and they were duly acknowledged as members of the same.

J. A. S.



Apiarian Display at the Illinois State Fair, 1903.



Display of Jas. A. Stone & Son, of Sangamon County.



Display of George Poindexter, of De Witt County.



Display of Chas. Becker, of Sangamon County.



Display of Aaron Coppin and Wife, of Marshall County.

FOUL BROOD

AND

OTHER DISEASES OF BEES.

[Republished by permission of N. E. FRANCE, Foul Brood Inspector,
of Wisconsin.]

Foul brood—*bacillus alvei*—is a fatal and contagious disease among bees, dreaded most of all by bee-keepers. The germs of disease are either given to young larval bee in its food when it hatches from the egg of the queen-bee, or it may be contagion from a diseased colony, or if the queen deposits eggs, or the worker-bees store honey or pollen in such combs. If in any one of the above cases, the disease will soon appear, and the germs increase with great rapidity, going from one little cell to another, colony to colony of bees, and then to all the neighboring apiaries, thus soon leaving whole apiaries with only diseased combs to inoculate others. The Island of Syria in three years lost all of its great apiaries from foul brood. Dzierzon, in 1868, lost his entire apiary of 500 colonies. Cowan, the editor of the *British Bee Journal*, recently wrote: "The only visible hindrance to the rapid expansion of the bee-industry is the prevalence of foul brood, which is so rapidly spreading over the country as to make bee-keeping a hazardous occupation."

Canada's foul brood inspector, in 1890 to 1892, reported 2395 cases, and in a later report for 1893 to 1898, that 40 per cent of the colonies inspected were diseased. Cuba is one of the greatest honey-producing countries, and was lately reported to me by a Wisconsin bee-keeper who has been there, and will soon return to Wisconsin: "So plentiful is foul brood in Cuba that I have known of large apiaries to dwindle out of existence from its ravages, and hundreds more are on the same road to sure and certain death. I myself took in 90 days in Cuba, 24,000 pounds of fine honey from 100 colonies, but where is that apiary and my other 150-colony apiary? Dead from foul brood." Cuba, in 1901, exported 4,795,600 pounds of honey, and 1,022,897 pounds of beeswax.

Cuba at present has laws to suppress foul brood, and her inspector is doing all possible to stamp the same from the island.

Even in Wisconsin, I know of several quite large piles of empty hives, where all the bees have died from foul brood; also many other apiaries where said disease had gotten a strong foothold. By the kindness of the Wisconsin bee-keepers, and in most cases, by their willing assistance, I have, during the last five years, gotten several counties free of the disease, and at the present writing, March 12, 1902, have

what there is in Wisconsin under control and quarantined. This dreadful disease is often imported into our State from other States and countries, so that we may expect some new cases to develop, until all the States shall enact such laws as will prevent further spread of the same. Arizona, New York, (1899), California (1891), Nebraska (1895), Utah (1892), Colorado (1897), have county inspectors, and Wisconsin (1897), and Michigan (1901), have State inspectors. The present Wisconsin law, after five years of testing and rapid decrease of the disease is considered the best, and many other States are now making efforts to secure a like law.

There are several experimental apiaries in Canada under control of the Ontario Agricultural College, also a few in the United States, especially in Colorado, that have done great work for the bee-keeping industry, and their various published bulletins on the same are very valuable. The Wisconsin State Bee-keepers' Association have asked that an experimental apiary might be had on the Wisconsin experimental farm, but at present there are so many departments asking for aid, that I fear it may be some time before bee-culture will be taken up.

CAUSES OF FOUL BROOD.

1. Many writers claim foul brood originates from chilled or dead brood. Dr. Howard, of Texas, one of the best practical modern scientific experimenters, a man of authority, has proved beyond doubt that chilled or common dead brood does not produce foul brood. I have, in the last five years, also proven his statement to be true in Wisconsin, but I do believe such conditions of dead brood are the most favorable places for lodgment and rapid growth of diseases. Also, I do not believe foul brood germs are floating in the air, for, if they were, why would not every brood-comb cell of an infected hive become diseased? I believe that this disease spreads only as the adult bees come in contact with it, which is often through robber-bees. Brood-combs should not be removed from any colony on cold or windy days, nor should they be left for a moment in the direct rays of sunshine on hot days.

2. That foul brood may be caused by the need of proper food and temperature. Generally this disease does not appear to be serious during a honey-flow, but at the close of the honey season, or at times of scarcity, it is quite serious, and as the bees at such times will rob anywhere they can find stores, whether from healthy or diseased combs; it is the duty of every bee-keeper to keep everything carefully protected. Hive-entrances contracted, no old combs or any article with a drop of honey in where the bees can get to it. While honey is coming in from the various flowers, quite a portion is used direct as food for the larval bee, and with such no disease would be fed to the bees. Such fed bees, even in a diseased hive, will hatch, as is often the case. I never knew of a case where a bee hatched from a brood-cell that had

ever had foul brood in. If the germs of disease are there in the dried scale attached to the lower side-walls, bees will store honey therein, the queen will deposit eggs, or the cell may be filled with pollen, or bee-bread, as some call it. Said honey or pollen, when it comes in contact with those germs of disease, or the food given the young bee, if in the proper temperature, said germs of disease will grow and develop rapidly.

CAUSES BY CONTAGION.

I fully believe if the history of foul brood in Wisconsin was known, nearly ever case could be traced to contagion from diseased combs, honey, or from some diseased queen-breeder's cages. Here are some instances where I have traced the history of contagion in Wisconsin:

1. Diseased apiaries, also single colonies, sold either at auction or private sales. Several law-suits have resulted in the settlement of some of the cases.
2. Brood-combs and various implements from diseased hives, used by other bee-keepers, and borrowed articles.
3. All the bees in an apiary dead from foul brood, and the hives having an abundance of honey in the brood-combs, said combs placed out by the side of hives so that neighbors' bees might get the honey. From those combs I lined robber-bees to seven other apiaries, and each in time became diseased and were treated.
4. Robber-bees working on empty honey-packages in the back yards of grocery stores and baking factories. Said honey came from diseased apiaries, some located in far distant States, even Cuba.
5. Loaning of hives, combs, extractors, and even empty honey-packages.
6. Buying honey of strangers, or not knowing where it was produced, and feeding it to bees without boiling the honey.
7. Too common a practice of using old brood-combs from some apiary where the owner's bees have died from "bad luck," as he calls it.
8. Queen-bee—by buying queen-bees from strangers and introducing her in the cages they came in. I have traced several new outbreaks of the disease to the hives where such queens were introduced, and the queens came from distant States. To be safe, on arrival of queen, put her carefully alone in a new and clean cage, with good feed in it. Keep her in there, warm and comfortable, for a few hours before introducing. The shipping-cage and every bee that came with the queen should be put in the stove and burned. I do not think there is any danger from the queen so treated, even from diseased hives, but I do know of many cases where disease soon appeared in the hives where the shipping-cage and bees were put in with the colony. The great danger is in the food in said cage being made from diseased honey. I was called to attend a State bee-keeper's meeting in another State.

and I asked if any there had had experience with foul brood. There was a goodly number of raised hands. Then I asked, "Do anyone of you think you got the disease by buying queen-bees?" Again several hands were raised. Even bee-keepers there had traced the disease in their apiaries to the buying of queens, and all from the same breeder. If you get queens from abroad, I hope you will do with her as I have above described. Better be on the safe side.

EXPERIMENTS.

1. A prominent Wisconsin bee-keeper some years ago had foul brood among his bees so bad that he lost 200 colonies before the disease was checked. Having a honey extractor and comb-foundation machine, he first boiled the hives in a large sorghum pan, then in a kettle all combs were melted after the honey was extracted, the honey was boiled and also the extractor and implements used. The bees were returned to their hives on comb foundation he made from the wax made from the melted combs, then fed the boiled honey. Several years have passed and there has been no signs of disease in his apiary since.

2. Foul-brood germs are not always killed when exposed to a temperature of 212 deg. F. (boiling point) for 45 minutes. But in every case where the combs are boiled in boiling water, and same were well stirred while boiling, no germs were alive.

3. Foul brood in brood-combs is not destroyed or killed when exposed to the temperature of Wisconsin winters of 20 deg. below zero, and in one case I developed foul brood from combs that had been exposed to 28 deg. below zero.

4. Honey, if stored in diseased combs, acts as a preserving medium, and in such cases the germs of disease will remain so long as the comb is undisturbed. Four years at least.

5. Honey or beeswax, or the refuse from a solar or sun-heat extractor, is not heated enough to kill foul-brood germs. Several cases of contagion where robber-bees worked on solar extractor refuse or honey.

6. Comb foundation made by supply manufacturers is free from live germs of disease and perfectly safe to use. To prove this experiment beyond doubt, I took a quantity of badly-diseased brood-combs from several apiaries, and rendered each batch of combs into wax myself on the farm where found. Then on my own foundation mill I made some brood foundation. I also took quite a quantity more of said wax, went to two wholesale comb foundation manufacturers, and both parties willingly made my experimental wax into comb foundation just the same as they do every batch of wax. I then divided the various makes of foundation and selected 20 of the best bee-yards in Wisconsin, where no disease had ever been known, had the same placed in 62 of their best colonies, and in every case no signs of disease have appeared. Those same colonies continue to be the best in the various apiaries.

SYMPTOMS OF FOUL BROOD.

1. The infected colony is not liable to be as industrious. Hive-entrance with few guard-bees to protect their home. Sometimes fine dirt or little bits of old comb and dead bees in and around the hive-entrance, and often robber-bees seeking entrance.

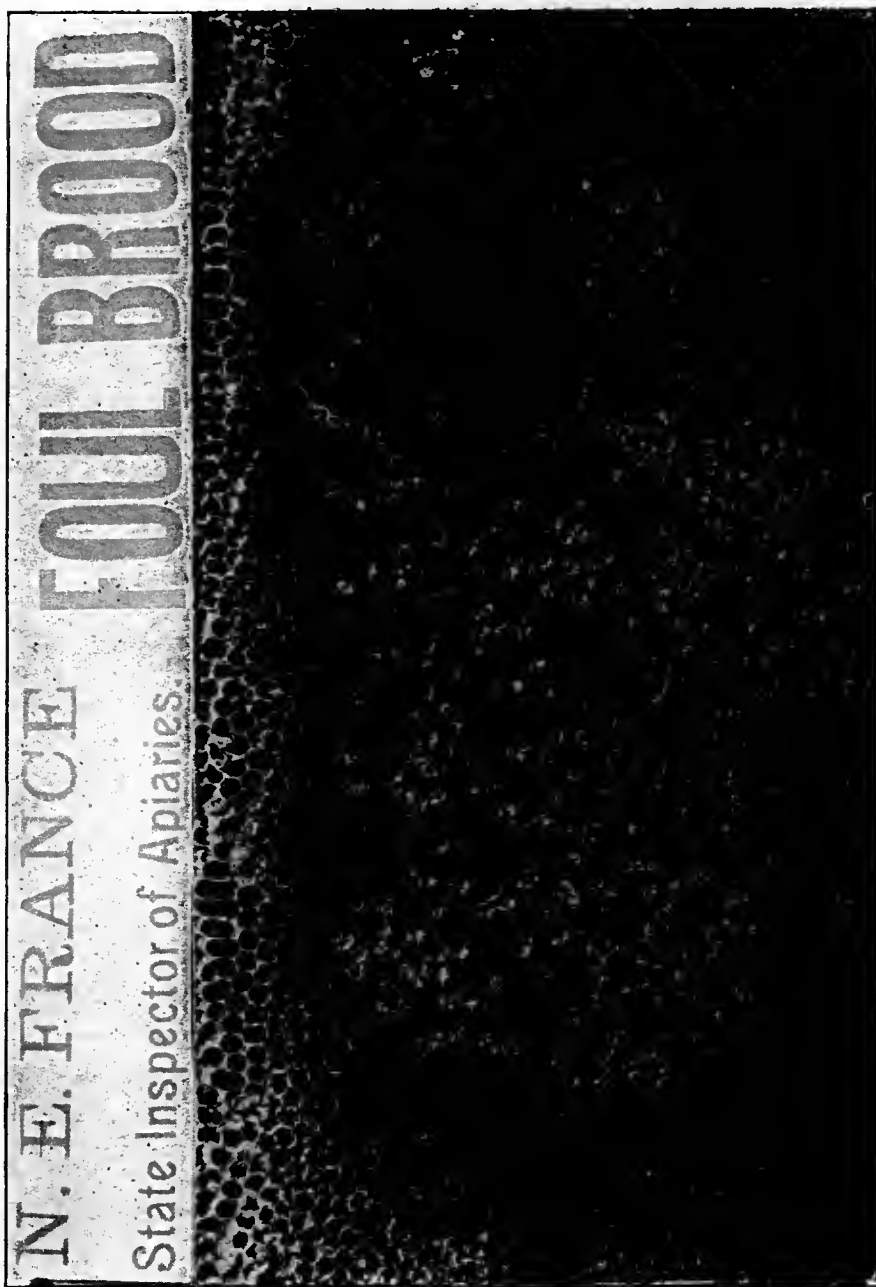
2. Upon opening the hive, the brood in the combs is irregular, badly scattered, with many empty cells which need inspection.

3. The cappings over healthy brood is oval, smooth and of a healthy color peculiar to honey-bee brood, but if diseased the cappings are sunken, a little darker in color, and have ragged pin-holes. The dead larval bee is of a light color, and, as it is termed, ropy, so that if a toothpick is inserted and slowly withdrawn, this dead larva will draw out much like spittle or glue.

5. In this ropy stage there is more or less odor peculiar to the disease; it smells something like an old, stale glue-pot. A colony may be quite badly affected and not emit much odor, only upon opening of the hive or close examination of the brood. I have treated a few cases where the foul brood odor was plainly noticed several rods from the apiary.

6. Dried Scales—If the disease has reached the advanced stages, all the above-described conditions will be easily seen and the dried scales as well. This foul matter is so tenacious that the bees cannot remove it, so it dries down on the lower side-wall of the cell, midway from the bottom to front end of the cell, seldom on the bottom of a cell. According to its stage of development there will be either the shapeless mass of dark-brown matter, on the lower side of the cell, often with a wrinkled skin covering as if a fine thread had been inserted in the skin lengthwise and drawn enough to form rib-like streaks on either side. Later on it becomes hardened, nearly black in color, and in time dries down to be as thin as the side-walls of the cell. Often there will be a small dried bunch at the front end of the cell not larger than a part of common pin-head. To see it plainly, take the comb by the top-bar and hold it so that a good light falls into the cell at an angle of 75 degrees from the top of the comb, while your sight falls upon the cell at an angle of about 45 degrees. The scales, if present, will easily be seen as above described. This stage of disease in combs is easily seen and is always a sure guide or proof of foul brood. Such combs can never be used safely by the bees and must be either burned or carefully melted. Be sure not to mistake such marked combs in the spring for those soiled with bee-dysentery. The latter have a somewhat similar appearance but are more or less surface-soiled, and will also be spotted or have streaked appearance by the dark-brown sticky excrements from the adult bees. Please examine closely this half-tone print, which I photographed from a diseased comb containing all stages of foul brood. This

comb came from the last living weak colony of a once large and profitable apiary.



TREATMENT.

"A bee-keeper who does not discover foul brood, before his nostrils remind him that there is something wrong with his bees, is not the proper person to treat the case." Dr. Howard, in his valuable book on foul brood, states: "I regard the

[Continued on page 151.]

Report of the Proceedings
—OF THE—
Chicago-Northwestern
Bee-Keepers' Association

—HELD AT—
Chicago, Ill., Dec. 2 and 3, 1903.

(Through the courtesy of George W. York, of the American Bee Journal, we are permitted to print the following report of the Chicago-Northwestern Bee-Keepers' Convention.)

The convention was called to order by Pres. George W. York, after which Pres. J. Q. Smith, of the Illinois State Bee-Keepers' Association, offered prayer.

Pres. York—I am sure we are all rejoiced this morning to find as many here as we have to begin with. I am sure we shall have a pleasant gathering in this nice, quiet room. The first on the program is introduction of bee-keepers from a distance. After this I wish you would speak to them as you meet them.

Dr. Miller—Is there any law against speaking to any others who are not introduced?

Pres. York—Yes. You must not speak to others at all!

At this point, Mr. Griggs, Mr. Hutchinson and Mr. Binger of Michigan, Mr. Coverdale and Mr. Benton of Iowa, Mr. Whitney and Miss Candler of Wisconsin, and Mr. Niver of New York, were introduced to the convention. After this the annual report of the Secretary-Treasurer was read. On motion, the financial report was referred to an auditing committee.

Blank paper slips having been distributed for questions, they were gathered up, and then discussed. The first subject was:

GRANULATION OF WELL-RIPENED HONEY.

“Will thoroughly-ripened honey granulate?”

Pres. York—Don't all speak at once, because the reporter couldn't take it all down!

Mr. Niver—I would like to ask a question. Is there any honey known that will not granulate?

Mr. Whitney—I asked that question. I have some honey that is uncapped, that I have had three years exposed to the

air and it does not granulate. I have it here with me in my room. I think it is thoroughly ripened; it is just like wax, but there is no granulation. I took from my honey-house last spring a number of frames of honey that I had stored away for use among the bees in the spring, 30 or 40 of them, and not one of them that passed through zero weather, granulated. That prompted the question whether thoroughly-ripened honey will granulate. I think that that was thoroughly ripened.

Mr. Niver—To explain my question. I have had a good many calls for honey that will not granulate. I would be very glad to be able to get it. I was told that the Cuban honey did not granulate. I sent there for 500 pounds of it. I was wanting it to supply the patent medicine trade. Their trouble is to get honey that will not granulate, but I found that Cuban honey in our country will granulate as any other honey. If Mr. Whitney has any way to keep it from granulating, or bees that produce honey like that, he struck something good.

Mr. Abbott—The honey made from Mexican Spanish-needles doesn't granulate for me. I have had some for three years and it has never granulated any; but I have never gotten any Spanish-needle honey that did granulate.

Mr. Niver—How are you keeping it?

Mr. Abbott—It is just in the cans. I suppose it is no trade secret. I mix alfalfa with it, half and half, and I can keep honey in the stores the whole season through without granulating.

Pres. York—That's the kind of "adulterating" or mixing that the bee-keeper is permitted to do.

Mr. Abbott—I supposed so, or I wouldn't have told it publicly! I don't know that that is characteristic of all Spanish-needle honey, but I had noticed that, and it never granulated on my hands.

Dr. Miller—To answer that very fully there ought to be some modification, possibly, of the question. The question might arise, What do you mean by thoroughly ripened? Will it granulate? Some would say, and I think very fairly, if it doesn't granulate within a year we say it doesn't granulate, yet it may granulate in two or three years. I want to suggest in the first place that there is no question but what there is honey that doesn't granulate. There are two or three samples right here. There are samples of honey that do not granulate, and I am quite a little of the opinion that almost any honey that you or I have may be made non-granulating, simply by ripening for a very long time. By keeping it warm enough, long enough. Those two things—warm enough, long enough. I saw some samples of comb honey in two places, one in Pennsylvania and one out in this State, that had been kept over the winter in a zero place, that were not granulated and the comb not cracked, and I don't know any reason why it might not have kept for years in that way; and all the secret was, the honey had been kept during the summer season up in one of those hot garrets where you can hardly breathe, and you wish you could get out. If

you put your honey in one of these places and let it stay long enough, I am of the opinion it will not granulate, and it will be as Mr. Whitney says, it will be waxy. That will fill your trade, Mr. Niver. That's one of the things all of us need to learn, whether it be extracted or comb, to keep it in a warm place if you have any, or a place warm enough, long enough, and it will be non-granulating.

Mr. Wilcox—Won't you say in an open vessel?

Dr. Miller—You must remember my weakness. I am a comb-honey man. Extracted honey should be open enough to allow the air to penetrate.

Mr. Kanenburg—I had an experience with my own honey. I have an attic where I keep my honey for over winter, in an attic with just shingles on the roof where it is zero almost all of the time. I have had honey there for at least two years. I had a couple of boxes up there in the summer, and in the winter I let them stay right in the attic.

Dr. Miller—How near zero does it get in that attic in the summer?

Mr. Kanenburg—There is no zero there in the summer!

Mr. Wilcox—I have had quite a considerable experience in the line suggested by Dr. Miller, and I have found from repeated trials that it does not granulate if you will evaporate it. It is no longer a syrup, but it gums; but it is impracticable to do that for the market, therefore I cannot see much benefit, and some honey, if placed where it will absorb moisture from the air, will granulate. It isn't in the character of the honey, but simply the care that is taken of it.

Pres. York—What we want is something that will prevent it from granulating in grocery stores. The great difficulty I have found in selling honey in the city is to prevent the granulation in all kinds of temperature. Some of the groceries are warm and some are cold, some don't have fire all night in the winter. What we want is more than a little sample of it. If a honey-bottler had a carload or two he would get a good price for it. What we want is a large quantity that doesn't granulate.

Mr. Whitney—I stated that I took a number of frames from my honey-house that had passed through zero weather, and that didn't granulate. Honey in a shipping-case would keep, it seems to me, from granulating just as well as that comb honey from the honey-house during zero weather, providing it has been thoroughly ripened. I don't know why the grocer cannot keep tons of it unless as Mr. Wilcox says, the weather should be very damp. Of course, it would gather moisture, but in any ordinary dry weather I don't see why they couldn't keep tons of it through zero weather from granulating.

Mr. Hutchinson—It is possible we don't know yet what makes honey granulate. Mr. Boardman claims to have some secret process, at least he doesn't tell what it is, that pre-

vents honey from granulating in the comb. We found that when years ago I was rearing queens, I would unite nuclei in the fall and lots of combs would have unsealed cells, and we would naturally think that that honey wasn't ripened, because it was not sealed. That would be in the very warm weather. In the winter those combs would hang there with the honey in the unsealed cells all winter long and not granulate. There may be some point in the granulation of honey we haven't gotten onto yet.

Mr. Josephson—Why do we want to teach the people to buy liquid honey? I was born in Sweden. In that country we consume a good deal of honey, but can never sell liquid honey. They want granulated, and considered liquid honey unfit to eat. They said it wasn't ripened. We are teaching the people to buy liquid honey here. Why don't we teach them to buy granulated honey, and we get out of all that work?

Pres. York—Perhaps we had better ship our honey to Sweden!

Mr. Starkey—I have had the same difficulty in my experience in handling honey. The fact is, that my trade wants liquid honey, and we find that out when we try to teach them to use something else. My experience is that honey that is once brought to the proper temperature that drives out the moisture, evaporates the water particles, if kept so that water does not again get into it, it will not granulate. But this gentleman's question would conflict with that. Small particles of honey, as in a cell exposed to the air, will not absorb moisture so that it will contain it long enough to cause granulation, but if you want to prevent your liquid honey from granulating after it is once ripened, then it must be kept sealed, or else this bulk of honey will absorb sufficient moisture to again bring about granulation. That is my experience. I believe we can answer the question, the reason it does not granulate, that is, exposed to the moisture, is that the smaller quantity will not contain it sufficiently but will evaporate exposed to the air as it is. But to prevent larger quantities it is necessary to keep it sealed. You can keep it indefinitely if you will bring it to the proper temperature and then seal it in glass.

Pres. York—What is the proper temperature?

Mr. Starkey—I would say from 150 to 160 degrees, if quickly. If a slower process, lower temperature will do it, but it takes longer time; as in Dr. Miller's suggestion, an attic is an ideal place if the honey is left there long enough to ripen thoroughly. Speaking again of the Spanish-needle. In 1879, when I began in Missouri, that was my main honey crop, and I sold hundreds of pounds in the market and in the stores, or anywhere they kept it, and I never knew it to granulate. I kept it in sealed jars. I was selling there two or three years, and I never knew any of the merchants to have any of it candy on their hands,

Mr. Kanenburg—About two or three years ago I had quite a little difficulty with honey granulating on my hands, and so I figured it out that if I got a box and put a glass over it and put it in there and peddled honey, it wouldn't granulate. It succeeded perfectly. Let me state that in the tight box with the glass over it the temperature was 150 degrees. I took the temperature two or three times. I kept that honey two or three years and it never granulated.

Dr. Miller—If you have your honey brought, as you may call it, to that waxy state before it ever granulates at all, then you can get along a good deal better than if you have honey that has granulated. Never allow it to granulate. You say that you can get a sample that will not granulate but a larger quantity is another thing. That's true; but if there's price enough you can get the larger amount. You could have a place arranged—it would take but very little difference in the price of a pound for making a building for it and put a large amount there. It isn't the bringing it to a certain temperature. One hundred degrees is better than 160, and if 160 degrees will do it in a short time the 100 degrees will in a long time. There is something in the long time that counts. We are taking quite a little time on this, but I believe it is important, and I believe there is only one way that we can do a little more than we do in having it ripened and never allowing it to granulate. And, by the way, I may say to the president, no matter how bad the place that the grocers have, if it is not allowed to granulate, and is so treated that it has got into that waxy condition, that grocer will have to take some special pains to have it granulate if it has first been put up without granulating.

Mr. Abbott—I agree that it is very important, and we are just touching the danger-line. This waxy condition spoken of is very easily gotten by a little carelessness, and if you are not very careful you will spoil the flavor of the honey. There is a plan of ripening honey by a system of steampipes, and I bought some of this honey once. It never granulated, and I don't know but in the start the honey was all right and pure, and of that waxy consistency that nobody wanted it. It wasn't exactly burned, but it was like chewing molasses candy that hadn't been made quite thick enough, and it wasn't desirable honey for the family trade. Every once in a while I have myself permitted a can to get just a little bit harder than it ought to be, and while it wouldn't be burned at all, it would get thick and waxy, and it had to go back to Mr. Somebody, where it was used for candy or printers' rollers. It is a very easy matter to spoil honey while endeavoring to keep it from granulating.

Mr. Whitney—Do you mean spoil by overheating or getting too thick?

Dr. Miller—I don't believe it.

Mr. Abbott—You can't with the sun.

Mr. Moore—There is a train of thought that went through my mind when I heard Mr. Abbott speaking, and I ask him if there is any suspicion of glucose in that.

Mr. Abbott—No, sir.

Dr. Miller—Had a great degree of heat been used in that?

Mr. Abbott—Yes, sir.

Dr. Miller—There's where the trouble is. It is the long and not the high degree of heat that we want. I doubt very much if it ever ought to go above 120.

Mr. Abbott—140 degrees.

Dr. Miller—That may be, but if you keep it at 100 long enough, I won't be much afraid of it.

Mr. Niver—Just one more word on this subject. Mr. Morton, of New York, had a special building for his comb honey; he believed in heating comb honey to ripen it, to make it thick so it would ship better, and he had this special building covered with steel that kept warm, and over night, if it was going to be cool at all, he would heat it. He kept his comb honey in there from four to six weeks. I attribute his success in holding the trade, and nobody could get it away from him, to ripening his comb honey after taking it off the hives. You cannot leave it for the bees to ripen it, for it will get all travel-stained. In New York we have to take it off just as quick as capped, or else it will get travel-stained. By taking it up in this building and keeping it there for a month or six weeks, we got honey we could ship safely. It was very thick, and waxy, and heavy.

Mr. Duby—Do we know the cause of granulation? I believe from my experience that it may be in the method of handling the honey, because I got some of the same quality that had been canned, and some would granulate and others would not, and I noticed in handling it that sometimes there are air-bubbles, and I had an idea that that's what caused the granulation. If we could prevent these air-bubbles, perhaps it would not granulate. That's only a question I am asking.

Pres. York—Do we know the cause of granulation of honey? Don't keep it a secret if you do; we want to know.

REGRANULATION OF RELIQUEFIED HONEY.

"Will honey that has once granulated and then been re-liquefied, granulate quicker after that than the first time?"

Dr. Miller—Very much quicker.

Mr. Abbott—That's not my experience in 20 years.

Mr. Duby—Not mine, either.

Mr. Wilcox—If you reliquefy it most thoroughly. Keep it hot a long time, and after you think it is sufficiently melted so that there will be no particles in it, be sure it is all liquefied, and it will be all right.

Dr. Miller—I am very sure that Mr. Wilcox is right. I said yes, it will granulate very much quicker the second time, and I said to Mr. France, "There is one of the things that I am sure I know," and two or three said I was "off," and I found I didn't know after all. I am sure in a good many cases that I have tried it, it granulated very promptly after being liquefied, but it was simply liquefying and not ripening. Now, Mr. Wilcox is speaking about heating it and

retaining it at that heat until every particle is dissolved. You simply heat it up enough to melt it, at least in a great many cases that I tried it, to melt quickly and it will granulate ever so much quicker.

Mr. Abbott—I think this is something I know something about because I have been handling it. We sell honey in glass-jars, and our grocery men don't want it when it is granulated. We take it away at once whenever we find any in the stores that's granulated. We re-liquefy by dry heat in the glass, without taking the labels off. There is no more heat than is necessary to liquefy used. It is heated until it is absolutely clear, which we tell by holding up to the light, and when clear there is no more heat applied. After done, it is set in the stores and it will keep liquid four or five times as long as it did the first time when it was put in before granulating at all; and I believe if liquefied that way by dry heat it will keep longer. That has been my experience.

Dr. Miller—Mr. Abbott is bringing in another thing again. He is right, too. You heat honey up to 160, I don't care how quick you do it, get it to that and seal it up, and that will keep a long while without granulating. He has it sealed up and that counts in the case. He is right in that. We have the three different things. We have to sum them up.

Mr. Whitney—Do you loosen the cap of the jar?

Mr. Abbott—No, sir; we use corks. There is a label put on top and nothing is interfered with. It is just left as it is.

Mr. Baldridge—I have had a little experience in handling honey with the family trade. We ought to teach people to use granulated honey. I have been trying to teach my customers for the last three years to use granulated honey. I sell all my honey by sample. I carry granulated and liquid and I give them their choice, and in three years' time I think my customers have selected about four or five orders of granulated honey. I must have a queer class of customers to teach.

Pres. York—You are a poor teacher, perhaps!

Mr. Baldridge—They won't buy it if they have their choice.

Mr. Whitney—I have a few customers who use granulated honey, or rather extracted honey, I should say, and I have placed some of it in the stores at Lake Geneva, Wis.

Pres. York—Granulated extracted honey?

Mr. Whitney—Yes, sir. My best trade in extracted honey want the granulated. They say, "We don't want the liquid honey. Give us the granulated honey."

Pres. York—Are there a lot of Swedes up there?
[Laughter.]

Mr. Whitney—Not at all. The very fashionable trade along the Lake, and I ship a good deal here to Chicago, granulated solid. They want it. I have sent it to Kansas City, St. Louis, the slightly granulated.

Pres. York—You haven't sent any to St. Jo, Missouri?
Mr. Whitney—I believe I ought to.

Mr. Niver—Mr. Baldridge and I are working along the same line. I am working here in Chicago putting in granulated honey. I am right in a Swedish neighborhood, and they tell me of that yellow Swedish honey. They say it is the finest honey in the world. It doesn't suit my taste. A good many prefer the granulated honey and I give them their choice.

Pres. York—Mr. Josephson has a sample here, and he asked me what kind it was. I couldn't tell except I called it granulated Spanish-needle honey. It is heather honey.

Mr. Niver—The Swedish people like it granulated, and use it like butter. I have quite a percentage of families that take it that way from choice.

Dr. Miller—While this is here, let me mention one point in which it differs from any honey we have in this country. I am not sure about Sweden. In some places the heather honey cannot be extracted.

Mr. Josephson—They can extract it, but the reason is that they are very backward in bee-keeping. It can be extracted if it is done about three or four weeks after being gathered, but if it stays in the cold it granulates right in the hive, and it stays granulated if kept until the next year. By this you can see whether they had honey the year before. It will never go back to the liquid form.

Dr. Miller—I understand the honey was always in that shape even before extracted. The only way to get it out is to press it.

Mr. Josephson—They smash up the combs, and put it in a strainer, then keep the honey three, four or five weeks in a room where it is warm.

FALL ITALIANIZING OF BEES.

"Who thinks the fall a good time to Italianize a colony of bees?"

Pres. York—How many think so? Raise hands. Eight.

Mr. Smith—My experience is that you usually have young, vigorous bees for the spring work by Italianizing in the fall. That has been my experience. You have better results.

Mr. Hutchinson—Mr. Smith has just about told it. You have young, vigorous bees, and you will have more young bees to go into winter with. That queen is right in her prime, and that queen will build up quicker. You can get queens cheaper then; they are easier reared in the best of the season. I prefer to Italianize in the fall.

Mr. Wilcox—How late in the fall in this State?

Mr. Hutchinson—I wouldn't want to wait too late to rear the queen. I wouldn't care if it was in October, but I wouldn't want to rear a queen that late.

Mr. Baldridge—It is a good time to Italianize in the fall or any other time.

Mr. Whitney—I didn't raise my hand, as Pres. York didn't put the question on the other side, but my experience has not been very flattering. I would think it might be a good time to re-queen in the fall, provided you had a queenless colony and would be likely to lose them if you didn't re-queen. Late in the season I got a couple of valuable queens and I undertook to introduce them and they came pretty nearly setting my whole yard wild trying to rob each other, and they fought the colony of bees so frightfully that they actually destroyed it. The colony killed their queen, 2 or 3 days after introducing, as they were so disturbed. I had almost a similar experience trying another. It is the first experience I ever had introducing queens in the fall, and it seems to me that if they are introduced in the spring during flight-time, or after that, she would be during her prime and would have a good colony of bees to go into winter quarters with. It seems to me to be a much better plan. I have a clipping here which says the fall is the best time to introduce bees. I don't think so. That's what my experience taught me. Perhaps I don't do it right. My experience was very unfavorable.

Dr. Miller—I raised my hand because I think the fall is a good time. I doubt whether it is the best time. I doubt whether I ever introduced a queen in the fall, but if I had a queenless colony in the fall, I would think the fall was the best time to introduce the queen rather than to hold that colony queenless until spring. Whatever may be the disadvantages, there is this one advantage in introducing the queen in the fall, that you don't interfere at all with the honey crop as you may do by introducing a queen early in the season.

Mr. Abbott—The man that interferes with the honey crop in introducing a queen doesn't know how to introduce a queen.

Pres. York—Don't know when?

Mr. Abbott—Don't know how. Let me tell you how to introduce a queen so it won't interfere with any honey crop. The bee-papers have never found this out, and the people who write bee-books.

Dr. Miller—I thought I told them you said so!

Mr. Abbott—Put the queen on the hive and pay no attention to the queen that is in there. After she is in there let her lay all she can, and all she will, and when you get one in, pinch the other queen's head off and turn that loose and go on about your business. You can get five or six on top of the hive, as many as you want, and let all six out. There isn't any use of this fool nonsense, telling people to make their bees queenless. It is like hundreds of other things. It has been in bee-papers and agricultural papers until nearly everybody thinks it is absolutely the way to do this, and you

can't do it any other way, and if a man once in a while tells a different way, they will ridicule him and go on doing the same thing. I would like to see Dr. Miller get up and say that this nonsense stop, and we quit making colonies queenless a minute. That is, if we want to get use of the queen. I should like to know what you mean. The best time for what, or for whom? Do you mean the best time for the fellow who has the queens to sell, or the best time for the colony of bees, or the best time for the man's pocketbook? If you mean the best time for the man who has them to sell, why then that's a good time. He wants to get rid of them and he would like to have some fellow think that that was the time to buy them. If you mean the best time for the colony of bees, then it would have to be a queenless colony; and if you mean the best time for the man who is investing the money, I would say, don't do it. If you mean the best for success—now you may buy one for \$5.00 in the spring, you may buy one for \$2.00 or for \$1.00, but if you pay \$1.00 for a queen in the fall, and buy five queens for five colonies and you lose them, then you are out your \$5.00 which you might just as well have had in your own pocket as in the other man's pocket; but of course he didn't think so because he had queens to sell. A great deal of this is gotten up like the patent medicine man, all sorts of diseases, and you must think you have some of them. You can diagnose your own case, and his medicine cures it, and you buy his stuff.

Mr. Starkey—Let me tell you the best way to introduce a queen. I agree that Mr. Abbott's plan is all right, but I want to give you an improvement on it. [Laughter.] His way would be to open the hive and put the queen on top. Put the queen on the inside of the cover.

Mr. Abbott—Any place about the hive where the bees can get at her.

Mr. Starkey—I would only open the hive once. He will open it twice. I have to open the hive only once because I put the queen in the box that she shall remain in until the bees take her out by eating the honey or candy between. I introduce her in this manner. Now, of course, lots of men introduce queens that way, but that way will work. Now, in regard to the best time, we will have to say for what purpose. If a man wants to change a colony of bees, kill the old queen and introduce a better one, the fall of the year is a good time. Mr. York knows whether or not I have been buying them, because he sold them to me. I am not speaking for Mr. York, or any other man, but bees certainly do introduce nicely in the fall. As to robbing, they will rob whenever you examine them, if you happen to get robbers at them. If I have had any time to introduce after the harvest was on, I don't remember it. I have introduced several since. I believe the fall is the better; you can get the queens cheaper, and you can get them more promptly, because the bee-men have them on hand. That is the great difference over the spring-time, but you have to carry her over the winter. If you count on losing your bees, I say, don't introduce them.

If you wait until spring when the queen is once laying, there is just as much chance of robbing, and I believe it is better to do it in the fall. Then another advantage, you have got no brood to lose when you open the hive to find your queen.

Mr. Abbott—Let me make that a little clearer. Now, what I mean, I won't open the hive but once. I sometimes have four or five queens. I sell queens, to illustrate. There are four or five that I want to get. I take these cages and put them on top of the frames under a cloth and turn them down so that the bees can get at them. May be I want to introduce one of these to that colony. After they have been on the hive 48 hours I take any one of the five or six I had on there. I first hunt out the old queen and kill her, and make it so the bees can get at the candy. I want them to do it in about an hour, and if I don't think they will do it in an hour, I make a hole so I think they can eat it in an hour, and I go on about my business, and I have never lost a queen by that process.

Mr. Whitney—I have no doubt it is a good way to introduce a queen, but we seem to digress from the subject. The question is not how to introduce a queen, but what is the best time. I read in Gleanings, "I think you can easily Italianize your bees in the fall; in fact, that is the best season of the whole year in which to do it." Now, I haven't listened to any argument here yet that has satisfied me that it is. It may be the experience of others, possibly, but, in our locality, we haven't had good success in introducing the queen in the fall. It was almost impossible to keep the bees from robbing the colony after you open it in a certain season. I thought I could manipulate a colony of bees and do almost anything I wanted to with them, but I came pretty nearly being beaten trying to introduce a queen in the fall, and I never had any trouble introducing a queen during the summer-time; I have never had any successful robbing during all my experience of seven or eight years, until this fall.

Dr. Miller—I want just to refer to that point. With Mr. Abbott's plan he saves 48 hours of the queen's laying because he puts the caged queen in there, and leaves her there with the old queen, and he saves that 48 hours' laying. Now, don't settle down right away to that. When he takes away the old queen and liberates that queen, that queen doesn't commence laying right away, and the interference is more than two full days, because if the queen does as they do with me, they will sometimes be several days before they begin to lay, and when they do they begin on a small scale, and he saves that, too, and that makes his plan that much better; and after all there isn't so very much difference, and you cannot put in a new queen and have the laying go on without any loss. Set that down.

The convention then adjourned to meet at 1:30 p. m.

FIRST DAY—AFTERNOON SESSION.

After Pres. York called the meeting to order, the auditing committee made its report thus, which was duly approved, and the committee discharged:

Dr. Miller—Mr. President, your committee has the honor to report that we have examined the treasurer's books and found them correct.

Pres. York—I see on the program that the first thing after dinner is the President's Address. It is a good thing it didn't come before dinner. We probably all feel better about it now, and can stand it.

PRESIDENT'S ANNUAL ADDRESS.

Another year of bee-keeping experience has rolled around since last we met. To many of the bee-keepers of the central portion of our country it was a year of abundance of swarms and of honey. To some it brought the largest crop of honey they had ever had. Consequently to-day *they* wear a broad smile in addition to their good clothes.

Perhaps on account of the unusual crop, it seems the price of honey has weakened a little lately. But this ought not so to be. There is never enough honey produced to supply all who would eat it if they only knew its true value as a food. The fact is, a lot of people do not know that their health would be better—their life pleasanter and sweeter—if they would add to their regular daily "bill of fare" the honey that bee-keepers produce and offer for sale. Some day I hope to see honey advertised in the daily newspapers, along with Uneda Biscuit, breakfast foods, etc. When the people once realize what a healthful food honey is, there will be no further trouble about keeping up the price to where it ought to be.

THE ILLINOIS BEE-KEEPERS' LAW.

Since our last meeting, the committee then provided, in conjunction with the State Association, has secured an appropriation for bee-keeping in Illinois, amounting to \$2,000 for a period of two years. Already an inspector of apiaries, Mr. J. Q. Smith, and a deputy inspector, Mr. Herman F. Moore, have been appointed under the law. Another spring they can be called upon, and will do what they can to help put an end to bee-diseases in this State.

While this law applies only to Illinois, all bee-keepers are interested in it, regardless of what State they may live in; for every State added to the list of States having laws in the interest of bee-keeping makes it just so much easier for the States without such laws to secure them.

CO-OPERATION AMONG BEE-KEEPERS.

This is a subject that received considerable attention at the Los Angeles convention of the National last August. Something has been done about it in a few of the Western States, but it seems that not much effort has been made to get the bee-keepers of the Central and Eastern States together for their own benefit. Ours is a large country. If you doubt

it, just make the trip to California even from Chicago (including a walk down and up the Grand Canyon), and I think you will agree that we have a big country. There is no question in my mind, but that bee-keepers should form commercial organizations, for the control of the marketing of their product. But *how* can it be done? It is very easy to say a thing *ought* to be so and so, but it is quite a different matter *to make* it so and so—or, in other words, *to do it*.

I haven't the least doubt that properly organized and conducted, honey exchanges would be most excellent things for the producers. It would also help the consumers to have confidence in honey, when they could be assured that all "Exchange" honey is absolutely pure, because bearing the "Exchange" label or brand. There are great possibilities along these lines, I feel assured, but I am not wise enough, or sufficiently experienced, to *lead* the way to success. However, I am interested enough to be willing to do what little I can to help stir up the subject until such time as it shall result in something tangible and really of value to bee-keepers.

For nearly a half century bee-books, bee-papers, and bee-keepers' conventions, have been devoted to the teaching of bee-keeping and honey-production—to hives and apiarian paraphernalia and their manipulation. It seems to me that it is high time that bee-keepers begin to pay more attention to the *other* side of their calling—to the selling side—to the disposition of their honey product. The most of them know how to get the honey. The next thing is to turn it into more money than the most of them have been getting for it in recent years.

But I must not longer occupy the time of the convention. We are here to discuss matters of deep interest to all. You all have questions that you wish to ask, and all wish not only to have their own questions answered, but may want to answer the other fellow's questions. That is what we are here for. That we may have the best and most profitable meeting ever held by bee-keepers in this great, overgrown city, is my earnest wish; and that all may return to their homes feeling that it has indeed been good for them to be here, is my fondest hope at this time.

GEORGE W. YORK.

Mr. Abbott—Is the President's Address open to discussion? I don't want to discuss it. I want to offer a protest. I don't think it is fair for The American Bee Journal to advertise Uneeda Biscuit and not get paid for it. I move that be expunged.

Dr. Miller—How do you know that he isn't paid for it?

Mr. Abbott—I know from the look on his face.

Mr. Wilcox—As long as they buy our honey we will advertise their biscuit.

PREVENTING HONEY LEAKING FROM GLASS JARS.

"How do you keep honey from passing out from under the rubber of a sealed glass jar, creeping out as it were?"

Pres. York—I use glass-top jars, and the honey doesn't leak out from under the rubber ring under the glass.

Mr. Moore—My brother has put up honey for the retail grocery trade for six or seven years. He has always used one package, and that is the jelly glass holding, I believe, eight ounces of honey. It is put up like the historical Muth jar. It has flat sides to make it look larger, and is creased here and there, eight creases all the way around so it makes it look really fine, and looks is considerable. That trouble of the honey getting out of the jars is one that has always troubled the people who put honey in jelly glasses. I used to blackguard the other fellow by saying that they never could get good honey in a jelly glass. My brother has a steel stamp. It cuts out pieces of paper just the right size so that when he puts the tin cover down, it makes it air-tight—not air-tight, but honey-tight.

Mr. Reynolds—That must be something like they are using on the milk-bottles.

Mr. France—Have you tried that with a mason fruit-jar, putting a paper underneath?

Mr. Moore—No, sir.

Dr. Miller—The milk-dealers have a piece of heavy manilla paper cut with a stamp that makes a tight fit, and they put that down in the glass bottle, and it stays there. You can turn it upside down and it stays there.

Pres. York—You can do that with honey, with the ordinary jars that are used for honey—the screw-top jar with a rubber band.

Mr. Starkey—Should the honey-jar be so full as to have the manilla paper touch the honey?

Dr. Miller—I don't think it is absolutely necessary to touch it.

Mr. Reynolds—Yes, sir.

Mr. Smith—I have sold a good deal of honey in jars, but I have never had any leakage. I don't use rubbers. I use a jar like the cylinder preserve jar, which has a screw top, and on top of that it has a thick paper cut just to fit the lid, and when you screw that down it lets the air pass but the honey never leaks. You can turn it upside down. I have had the best results with that jar.

Pres. York—I have had the same jar, but the consumers couldn't get it open half the time. They would return it to the grocer because they couldn't open it.

Mr. Moore—This question of packages for honey is one that I have observed considerable. I will have to condemn the Mason jar first, last, and all the time. It is the cheapest, most worthless jar that is made at the present day. My own choice is the Lightning jar with that pry-over beer-bottle snap. I believe you all know what it is.

Pres. York—No, we don't all know. [Laughter.]

Mr. Moore—It is the only jar that is worthy of attention. It has a lever fastening.

Mr. France—We are not all familiar with beer-bottles!

Mr. Moore—Honey that gets air, if it has a chance to do so will expand. If you fill a jar honestly full, it will come out, every time. The only objection to the Lightning jar, which is the only first-class jar on the market to-day, is its expense. Any jar that has a leverage fastening, or a strong steel bar, ought to fill the bill. The jar Mr. Smith speaks of, I am not familiar with. He ought to put the Association in communication with these people. If the thread of these jars is good—the Mason jar is not good enough, it is too short.

Mr. Smith—Mr. York says he can't unscrew it. If you will just pour a little hot water on the top, you won't have any trouble unscrewing it.

Pres. York—We almost gave away the last lot on that account.

Mr. Abbott—It seems to me nobody has touched the reason why the Mason jar leaks. We use some, also another jar, a round, glass one, and the glass lid fits far down on top on a rump, and then a wire around the top and the sloping hill on each side would come under, and that jar never leaks honey. There is no chance for the honey to get up over. The Mason jar with top screwed on, there is a space between the jar and the lid, and it never leaks until somebody turns it upside down. You can fill it full and it will sit there on the shelves for weeks and not leak; but as soon as somebody comes in and turns it up, there is that little honey up behind, it will always stick there. It is the same way about the milk. If you don't turn the jar, the Mason jar would never leak. Our jars do not.

Pres. York—I think there is a jar that won't leak.

Mr. Abbott—The two-pound Muth jar.

Mr. Moore—I spent weeks traveling through Indiana a year ago on this matter of selling honey, and I sold honey in these jars that Mr. York handled, and the Roots are now selling and using—the Tip-Top. For a $\frac{3}{4}$ -pound jar it is absolutely the best. I am not plugging for Mr. York nor for Mr. Root. It is absolutely a first-class jar to put honey in to-day. Mr. Meredith puts horseradish in them. In my travels I found these same jars used for everything—horseradish, jams, etc.—all over, and not a single grocer had a complaint to make of it.

Mr. Meredith—Is that the jar referred to there, having the spring top?

Pres. York—This is not the one. It is a different jar.

Mr. Meredith—The one I put horseradish in I find a very serviceable jar for both horseradish and honey. Horseradish is put up cold, but where honey is put up warm, I think often the contraction will form a vacuum that has a great tendency, so much so of course, that with the rim removed, it would be still tight.

Pres. York—The question is: How do you keep honey from passing out from under the rubber of a sealed glass

jar, creeping out, as it were? I suppose the best answer is, Don't use that kind of a jar.

Mr. France—I agree there, but, in case you do, take heavy manilla paper and put on top first. I tried that to get rid of some of them. I use them because after the fruit-season the grocers have a lot that I can get at a discount. Put a heavy manilla paper on top of the Mason jar before putting on the cover.

Mr. Clarke—I don't see why honey cannot be put up in a Mason jar just the same as fruit can. Now, we know that if there is any leakage with fruit, the fruit is spoiled. Why is it that our best housekeepers use the Mason, or Ball, or some of these jars? Merely a question of air-leakage which probably gets to the honey. With fruit it is spoiled if there is any leakage, so I don't see why we couldn't put up honey just the same way as fruit.

Mr. France—I submit that Mr. Abbott hit the point there. If it is carefully carried and put right side up it will be all right, but our honey is tipped upside down. If honey were carefully handled it would be all right.

Mr. Clarke—I think entirely different from Mr. France. I know it is the law of the ladies that are successful with putting up fruit (I have done a good deal of it myself) that it is invariably turned upside down. The next day, if there is the slightest particle comes out, the bottle is put to one side, but not one in 50 will leak, and there is no possible means of the hot fruit creeping.

Mr. Abbott—Mr. Clarke seems to ignore one fact. You create a vacuum and you get the weight of external air equal to tons. It is hot, and when it cools it leaves a vacuum as they bear down on that lid with force. When you put the honey in there is no air pressure at all.

Mr. Clarke—you are mistaken entirely about that. In screwing down it makes the vacuum on top of the liquid, you turn it upside down and the liquid goes to the bottom, therefore the pressure must be on the liquid underneath and therefore it would come out from underneath the stopper.

Mrs. Stow—I think Mr. Abbott is correct.

Mr. Abbott—The idea of the vacuum is correct. Turning the can upside down doesn't make any difference.

Dr. Miller—I would like to ask a practical question as to what Mr. France said—whether that piece of manilla paper put on the top is to go down inside of the jar or over the top of the glass?

Mr. France—The way I have done, it sets down in, and the edges turn up a little.

Dr. Miller—That's coming right back to the milk-bottle arrangement again.

Mr. Kanenburg—The Mason jars are not made like the milk-bottles, they are wider down below than on the top. How can you put a piece of paper in there to make it flush with the jar? You cannot get it tight enough then.

Mr. France—I said there was a portion of them that leaked. I condemn the package, but it is a great help to use

the paper flange, and then when we let go, the expansion brings it back.

Mr. Whitney—If a piece of paper thick enough is put under the cover of the jar, and pressed down onto it, and that piece of paper fits on the top of the jar, and you screw your cap down, it won't leak. It won't leak even with the piece of paper right on top of the jar.

Mr. Meredith—I think that the expansion of honey, or any other liquid that is contained in a jar, if put up under ordinary temperature, will have a tendency to raise the top of the jar as a safety-valve might.

Mr. Wilcox—I would like to know if it is really admitted here that a Mason jar will leak honey with a cap put on between the jar and the top. I have not had as much experience as some, but I never had any leakage until I opened it the second time. When I screw it back I suck that out, and I have always taken it for granted that I took the honey out, and not that it leaked out if I left it sealed.

Mr. Johnson—I have had experience with Mason jars and others. I concluded that the Mason fruit-jar is my future package for extracted honey. I always use a new rubber and screw it down real tight, and they never leak. I suppose a Mason jar wouldn't be used for shipping very much anyway, but for a package to sell around home, I believe it is the best package that you can get, and you can get it cheap. Of course, the smaller the package the smaller the margin for selling them, because after you pay for the package you haven't much left. I sell my honey for a dollar a gallon, and ten cents for the package, or they can bring the package back and the money will be returned.

Pres. York—It seems to me a dollar a gallon is pretty cheap for retailing honey.

Mr. Chase—I asked that question, and I feel quite satisfied with what has been said on the matter, especially what Mr. Abbott said in regard to the pressure caused by heat. I put my honey up exclusively in Mason jars, and when placed upon the market I find considerable trouble. It seems to creep out over the top and spoils the labels. I didn't know but what it would be possible that something could be applied to keep it from creeping over. I think it is the space between the cover and the jar that allows the honey to come through.

Mr. Thompson—I agree with Mr. Wilcox on that subject, if put up rightly in the Mason jar it won't leak, and I have that confidence in the Mason jar that I would replace all packages that leak free of charge.

THE HONEY CROP OF 1903.

Pres. York—How many had an unusually good crop the past season? Raise your hands. Fifteen.

Pres. York—How many about an average crop? Raise your hands. Thirteen.

Pres. York—How many less than an average crop? Raise your hands. Five.

Mr. Hogge—There is a gentleman sitting next to me—

a new man in the business. He says he started out with two colonies, and had 500 pounds of honey and 8 colonies increase. He didn't hold up his hand.

Rev. McCain—This is my first season, so I cannot say whether it was comparatively good or not.

Mr. Whitney—Pres. York asked for an average crop. Now perhaps an average crop for some people would be better than an extra good crop for somebody else.

Pres. York—I had to ask the questions as they were written, you see.

Dr. Miller—I think that has nothing really to do with the case. The question is, What has been the season, no matter whether I am in a good or bad locality? Has it been unusually good, or bad, or has it been an average season? I think there has been quite a little light thrown on the subject by these answers. I think it is a remarkably good year everywhere. The fact is that one man will have a good crop and do such a lot of crowing over it that everybody thinks they have it. It is nothing more than an ordinary year, taking all the answers that are given—fifteen, thirteen and five. The fact comes out that there are quite a number here who have not had as good a year as usual.

Pres. York—I will ask Secretary Moore to bring forward Mr. Huber H. Root, who is to speak to us on Wax-Presses this afternoon. He is the youngest son of A. I. Root, whom we all know so well. Last year we had Mr. Root on the program and I promised him if we lived we would hear from him this year, as last year in some way his address was overlooked. I was very sorry indeed, and so offer this apology.

Dr. Miller—Before you give him another chance, and before we are through with this Root business, I want to say that there is another member of the family, Mr. Ernest Root, who was scheduled to be here, and I know that he expected and desired very much to be here, but he felt it his duty to attend the Ohio State meeting. They are trying to get a foul brood law there. He is very soon thereafter to attend a meeting in Washington, making it really impracticable for him to be here. As his name was publicly mentioned, I thought it best to make this explanation. I beg pardon for taking your time.

WAX-PRESSES AND WAX-RENDERING.

I will tell you how that was last year at the convention. Mr. York was so interested and delighted, and I was so interested that I forgot all about it until I got home and the first thing I remembered about it was his writing a letter to me which made me feel badly. I felt badly because he seemed to feel so badly. I hadn't felt badly, because I was so delighted with what I had heard.

As I look around here to-day, there is Mr. Hutchinson and Dr. Miller, and others that I am aching to hear from, that can speak from years of experience, and it occurred to me that this subject of wax was rather common-place, that

it didn't amount to very much, but I believe it does amount to more than we would ordinarily think.

Down in Cuba there are a lot of men keeping bees for the wax only. They spill the honey—use it to wash with, I suppose—but here a good many don't care anything about the wax we get; we are all after the honey. Some of us go after the wax, but we don't get it all. I don't know that it would be very hard to give an estimate as to how much wax is wasted in a sun wax-extractor. There is so much left in the old combs that cannot be gotten out. I am very well aware of the fact that many don't use the sun extractor, but most people use the method that I will designate as the cold-pressure method. I mean they heat the old comb in some other place and then press it in a press, and they don't surround that mass of wax and old comb with any heat during the time of the pressing.

About a year ago I spent considerable time working on this very question. My brother was anxious to see, if he could, which was the best method to use, steam, hot water, or this cold-pressure method, and also to determine which was better, a lever or a screw, and I was very much interested in these experiments that I conducted myself at that time.

I don't intend to make this an advertisement for the German wax-press. In fact, I shall not speak of that. I will describe the method that I used, in which I got more wax by considerable extent than I did by pressing under a screw and applying no heat at the time of the pressure. I found that I couldn't get anywhere near as much wax by pressing on wax without the heat at the time, and it seemed to me that this was the reason: The wax as it is being pressed, oozes out. It oozes out and comes in contact with a little cocoon, little piece of the debris. It is chilled. I reason in this way, that if there was some heat to carry that on out we could get so much more wax. That is a theory. Now I will try to show that this theory is a good theory.

I found that I could get—of course the amount of wax varies greatly that could be gotten from the comb. We had 8 or 10 barrels of old comb that had been accumulating around there for a year or so. With that old comb I found that with the hot water method I could get about 18 ounces of pure wax out of five pounds of the old comb. Using the same old comb and pressing without heat, that is, having heated the old comb in some other place, I found that I could get only about 10 to 12 ounces. That would seem to show that there was something lacking in that method. Well, I thought then that perhaps I didn't do it right some way or other, so I had some samples sent in from men who used that method of pressing out the old comb, having heated it some place else with a little water, perhaps. A man sent in a sample, and said that it was from cappings, and he defied me to find any wax in it. By the hot-water method I found that it contained 25 per cent of pure wax. It astonished me. I didn't expect to find anywhere near that much. I don't suppose that there would be that much, ordinarily, but I

think that that experiment proves that not anywhere near all the wax is obtained by that method of pressing, without any heat at the time of pressing.

Now I will describe the hot-water method that I used. I had an ordinary oil-barrel, I think. I cut it off so that it made a tub about one foot high, and then nailed ribs down through that about $\frac{3}{4}$ of an inch square. I made a frame of oak, 2x4, to surround that tub—one piece underneath, one piece on top, and two side-sticks, and to connect those we got heavy cleats. Then I had an ordinary carpenter's bench-vise. I was careful to take only such material as could be obtained at any hardware store in any town. This screw was three or four threads to the inch. I took the nut and placed it on the under side of the cross-stick, and there I had my wax-press.

The method I used was slow. I wrapped up about five pounds of the old comb in burlap; made a nice package of it that would just sit down in the bottom of the tub. Then I took a pail of boiling water and poured over it, and let it stand for perhaps a minute, and then applied the screw. I guess I left out the plunger under the screw. It was a hard wood piece sawed to fit the tub. After applying the screw on this amount of wax the wax immediately flowed on top. I could tell right away that I was getting a lot of wax. I turned the screw down with all my might, and then raised it, and with a stick pawed over the contents, and then applied the screw and found more wax, and the third time I found a little more wax, but the fourth time I didn't get enough to say so, so I applied the pressure about three times, and in this manner I obtained an average of 18 ounces; once I think it was as high as 24; again, down to 15, but it averaged about 18 ounces out of five pounds.

There was quite a little discussion at the time as to which would be better, a large 12-foot lever or this screw, and I tried both of them. It is a mathematical fact that there is more mechanical advantage with the pressure that can be exercised with one arm on the pressure of a screw than a man's weight on the foot of a lever. It is not only a mechanical fact, but a fact that I proved by experiment, but I don't know whether the pressure is what I want. I don't believe we want a lot of pressure. It was the pressing, and giving reasonable heat while pressing, and then raising up and pressing again, under the continued hot-water heat, and so I found that I could get just as good results with the lever as I could with the screw, but I had to employ a man to help me—a good heavy man to sit on that lever while I was at the other end, whereas with the screw I just used one arm. And then with the lever I had to have a good, strong post at the end, for the end of the lever, as a fulcrum. There is a tremendous pressure on the floor. Of course the screw and the strain is all on the frame. So I found that although I could get as much wax with the lever it was a lot more trouble. It took about the same length of time, and I had to have somebody to help me, and then continually dur-

ing the work the lever would slip off and bother me. I don't believe a lever is as good as a screw. It is too much trouble.

Then there is this question: How are you going to get that wax off of the top of that hot water? You can't dip it off; stand there and dip it off a spoonful at a time, it would take you forever. Just simply pour it out into another pail somewhere, and let it stand in it for half an hour, and you can take the cake of wax right off. It takes four or five pailfuls to keep going. It seems like a very mussy method, but it gets the wax. There are a good many who argue that they would rather get a little less wax and do the work quicker, but am I not right in saying that when a bee-keeper is rendering wax it is at a time when his time is not very valuable, and he can afford to take a little more time in order to get all that wax? I am sure that if any of you will try the two methods side by side, giving them a fair trial, you will be surprised at the amount of wax that can be gotten from the pressing with continued heat.

Now I would like to hear from some of the rest of you who can talk on subjects they have been working at for 40 years.

Mr. Wilcox—Mr. Root, would you melt that in another vessel and pour it into the wax-press and press it, or set the press on the stove and heat the water there? Which would be the better?

Mr. Root—It was a wooden tub. I should use the steam, and let the steam come right up in. I neglected to say that in my experiments with both steam and hot water it was the same—you get just as much wax one way as the other. The hot water took a little longer, but steam is so much nicer to work with, the wax is in nicer shape, and you don't have to pour it out and cool it, so that I prefer the steam, although steam could not very well be employed in a home-made wax-press.

Mr. Meredith—What about the amount of wax that we obtain from a solar extractor as compared to 18 ounces you got from five pounds?

Mr. Root—I really cannot answer that question, as to how much can be obtained from a given amount of wax in the solar, as to the hot-water method. I don't know. Of course we had two or three solar extractors running all the time, but I wasn't home long enough to work that out, but some time I intend to put five pounds of wax in the solar and give it a good trial, and see just how much wax we obtain; but I know I obtained lots of wax from the refuse of the solar, but of that I didn't keep any data, and I wouldn't even assume to state the amount.

Dr. Miller—In using the lever as compared with the screw, the lever exerts a continuous pressure and the screw you screw down and it stands right there, and it doesn't follow on down. Don't you think there is an advantage in that continuous pressure on the lever?

Mr. Root—I cannot see that. As I applied the screw I kept my hand turning right around, and just as soon as I

got it down I turned it up and pawed up the contents. The screw was continuous pressure because I kept it going all the time. The lever went down a good deal quicker, but I could not see any advantage or difference whether it went down quickly or slowly.

Dr. Miller—In actual practice you wouldn't expect some one to be there all the time.

Mr. Root—I was at it to keep it turned down all the time until I put it up and pawed it over.

Dr. Miller—You can't work for me! [Laughter.]

Mr. Moore—Would it be a good idea to work a solar extractor and the steam wax-press together, in order to work over the material that comes from the solar?

Mr. Root—I think that would be a very good plan. The wax that comes from the solar is such a good quality—nice, clear and clean.

Mr. Moore—Would you think it more economical to do the entire work with the steam-press?

Mr. Root—That's a pretty big question. The solar wax-extractor is handy to have around to throw wax into.

Mr. Wilcox—With the solar wax-extractor you save nearly every ounce of honey.

Mr. Root—That's true.

Mr. Wilcox—I would use the solar, anyway.

Mr. Root—I think it is economical to use the solar in connection with the others, but I wouldn't depend on that entirely, because I don't think that it gets more than half the wax out.

Mr. Moore—Do you consider the German wax-press embodies all the best principles that are known to-day as carried out by your experiments?

Mr. Root—You put me in a rather embarrassing position.

Mr. Moore—You are simply an expert. Tell us what you think.

Mr. Root—I got just as good results with the steam-press and the hot-water press. I couldn't find any advantage in the actual result one over the other, but the hot water took a great deal more time than the other and was mussv.

Mr. Starkey—Did you find that you got all the wax by either process?

Mr. Root—No. I found that if I kept on I could continually get a very, very little, but it was so little that I didn't think it paid to fuss with it any more. I suppose that if there was some method used whereby that refuse (I call it cheese), could be scraped up as in a cider-press, I think you could get a little more wax out of it, but I don't think it is worth the trouble.

Mr. France—I have had considerable experience, and in fact the first day I used the German wax-press I rendered out 2,000 combs. You speak about turning the screw down, and then up, and then down again. Now, didn't you turn the screw down until the wax oozed out, and then you turned it up and pawed it over, and the oozing out of the wax permitted you to turn it down lower?

Mr. Root—I forgot to mention that. I turned the screw down only as the wax oozed out and let me turn it down. There is no use exerting a lot of strength. Turn it down gradually, and then you can move it and turn it down a little lower.

Dr. Miller—That's right. (I may hire you after all!) There must be time allowed for that wax to work out. It is not going to go on a jump. When you squeeze it down tight it must have time to work out. Here is a practical question: Suppose that I am at work at something, and I come and screw that down, and I have it standing on the stove. I don't want to stand there screwing all the time. I want to leave for five or ten minutes. I would like to have a way that there would be a constant pressure. I want to know if there is any law against having a spring there? If there were a heavy spring and you screwed it down, that spring is making a constant pressure there until you come back again. What would be the objection to that? Cost?

Mr. Root—Cost is one thing, but I don't believe you would get any more wax that way, and I think you would have to be around there just about as much. That is, that operation of pressing is short. It didn't take me over five minutes to get it pressed after I got it ready, and it was my experience that it is better to do one thing well than to try and do two things and do neither well. But perhaps it is a good plan to let it stand. Did you find any advantage in that, Mr. France?

Mr. France—No. I melted it in another package. I had the press on the stove and kept it hot, and as fast as two iron kettles would melt it, I pressed it. We ran four wagon-loads of combs through the press that day.

Mr. Root—You heated it in another receptacle and then put it in the wax-press?

Mr. France—Yes.

Mr. Root—It is a question how much it will pay you. If you are working for time you had better do that way, but if you are working for wax you had better have the steam generating while pressing.

Mr. Moore—Mr. Root, you are a civil engineer. It is an ordinary lever used to turn the screw. Now in the presence of that tremendous force, would you add to it at all with a spring?

Dr. Miller—You can't add to it.

Mr. Root—It would make a very complicated apparatus. It would be so complicated and bulky that it wouldn't pay. The pressure you would derive from the use of the spring would be so—

Mr. Moore—Infinitesimal, wouldn't it?

Mr. Root—Yes, sir.

Mr. Moore—It would be zero, wouldn't it?

Mr. Root—It would require a very strong spring.

Dr. Miller—I protest against that. The screw here brings it down to a certain point. Within a very short time there is no pressure there. Now, if you had a spring there—

for instance, you have a spring that stands eight inches. Now let that stand there alone, and the sinking away of this mass will allow that to come down to ten inches. Of course there is a constant pressure. Don't understand me for a minute to say that that spring will add a quarter of a grain to the force. It can't possibly do it.

Mr. Root—You mean the spring will act after the screw has ceased to act?

Dr. Miller—That's the point. It is a matter of time.

Mr. Root—Why not turn the screw down a little more? Is your time so valuable?

Dr. Miller—Just so. When I hire you I won't mind so much!

Mr. Root—It takes so little time, the whole operation, that I fail to see the advantage of the spring.

Mr. Whitney—I simply want to ask the Doctor if he wants to hire Mr. Root?

Dr. Miller—Yes, I am getting him trained!

Mr. Root—I would like to work for him.

Mr. Starkey—We will say that this block that rests on top of the wax has on top of that spring—one of the little, common, coil springs like under a wagon-bed. On top of that a plate that this screw comes to. If the screw strikes on that spring and forces it close with this pressure on the block, and goes down to where the wax is, instead of the pressure being lessened this spring continues to draw the pressure on this block-head to every part that has given way by the wax. I think that is a very valuable point. Instead of having to come back, this spring will carry the pressure on four or five times, and it will save valuable time that a man might be doing something else.

Dr. Miller—Mr. Root says it is so little time that it don't count.

Mr. Meredith—I should say a spring strong enough to give that pressure would be something a little larger than is used on the ordinary passenger coach.

Mr. Root—I understand that spring would act only when the screw wasn't acting. It is their opinion that the spring would do what you would do when you got back there.

Dr. Miller—Yes.

Mr. Root—You can't make me believe that the spring would be strong enough to do what you would do.

Mr. Starkey—We don't contend that it would do all, but it would continue to exercise the pressure. If we should happen back we might turn once, but you would turn four times.

Mr. Root—In the meantime, the whole operation takes seven or eight minutes.

Mr. Moore—The temptation to trip Dr. Miller up is too great.

Dr. Miller—I am down by now.

Mr. Moore—How many tons pressure is there in that screw pressing down the wax, as nearly as you can tell?

Mr. Root—Three or four.

Mr. Moore—You take the strongest spring you ever saw

in a lumber-wagon, and put three or four tons on it, how much good will it do you? Mr. Meredith says a spring on a passenger coach.

Mr. Meredith—With a screw of four or five threads to an inch, it might be capable of exerting twenty tons.

Mr. Root—There is hardly any limit.

Dr. Miller—I don't think the point is worth holding to. A spring that will exert one pound of pressure will continue that pressure.

Mr. Root—I admit that.

Dr. Miller—And the strength of the spring doesn't count, but the whole thing is settled when he says it takes so little time to do it that the time cost isn't worth counting.

Mr. Root—Dr. Miller wouldn't have a good deal of time to get away to his other work before he would have to get back and put in another comb.

Mr. Stewart—Have you ever cut up timothy hay and put in with your cheese?

Mr. Root—No, I have not.

Dr. Miller—Have you done that?

Mr. Stewart—I have, and with very good results. It gets it separated.

Dr. Miller—I want to remind Mr. Root to read a periodical that is published in Medina, Ohio, in which that was mentioned as being done in Germany.

Mr. Root—You've got me there.

Pres. York—What's the name of the publication?

Dr. Miller—*Scrapings*—or something of that kind.

Mr. Root—I will read it.

Dr. Miller—I think it was your brother who asked whether a central affair, something in the middle of the cheese, allowing the wax to come out through, would help any. He tried that, I think.

Mr. Root—As I look at it, the wax below wouldn't go up to that, and when I get about the wax that I could get anyway, I don't see the advantage of it. You would have to have twice the amount of wax, and you cannot give it the amount of pressure it ought to have.

Dr. Miller—I tried it and I don't believe it helps.

Mr. Abbott—How many people are there here who get 100 pounds of wax every year? [Six.]

Mr. Abbott—Now you see you can get, what percentage more?

Mr. Root—I can't give the exact percentage more, but probably one-fourth.

Mr. Abbott—One-fourth of a pound would be 25 percent of wax. What does a German wax-extractor cost?

Mr. Root—\$14.

Mr. Abbott—25 pounds of wax at 20 cents a pound—what I am trying to get at is an opinion as to how much interest there is in this convention investing \$14 in a machine. Not all these theories will work, but they must ultimately work out in dollars and cents or else they are of no use. Just trying to see how much it would amount to, to this con-

vention, provided they save what he says they can save. You have six people saving 25 pounds of wax in a year, and what I want to see is if it would pay you to invest \$14 in any kind of a machine.

Mr. Root—I don't think it would pay the small bee-keeper to get a German wax-press. I don't know what my brother would say, but I believe that.

Pres. York—You can tell the truth here! [Laughter.]

Mr. Root—I believe my brother tries to tell the truth. I would try hot-water pressure.

Mr. Baldrige—Especially on cappings.

Mr. Root—You can get almost all the wax out of the cappings.

Mr. Baldrige—By setting in water it will all rise.

Mr. Root—This I am speaking of is only in reference to combs.

Mr. Abbott—May I tell a small bee-keeper how I do? It seems like a simple, small way. If you have 50 or 60 pounds of combs, pour warm water on it and let it soak thoroughly. My wife does that; I don't suppose I would bother with it. Then she has a large pan that fits inside of the oven. She puts in the wax that would weigh four or five pounds on top of a large sieve, and shuts the oven door and goes on about her business. In a little while the wax is all down in the water, and then she takes the sieve and puts more in, and if done that way it about all goes to wax. There isn't much left to throw away.

Mr. Root—Are they old combs or new?

Mr. Abbott—Any kind she wishes; just combs that are thrown in a barrel or box, sometimes sections. Directly she has a cake of wax that weighs eight or ten pounds; but she always soaks it in warm water and doesn't scald or do anything else with it.

Mr. Root—I have heard of that method before. You put the wax in the receptacle right in the oven.

Mr. Abbott—Yes, and she keeps it there and shuts up the oven, and in the morning the settlings are all out and she has a cake of pure, clear, yellow wax. She makes it in little cakes, and we sell it for 60 cents a pound.

Dr. Miller—I have been figuring that over, and it looks to me a little like this, after raising the question of whether I could afford it or not: The expense of the machine and time will cost me about two dollars a year, perhaps, allowing a good interest on it. Now, I must make that two dollars every year, and if I get 28 cents a pound for my wax, as I suppose I can, then I must get seven pounds of wax extra in the year to pay expenses, and if there is left any debris in the slumgum as much as one-fourth of the wax, then that seven pounds represents the total of my wax for the year at 28 cents a pound. So if I am getting 28 pounds of wax every year, then I can afford to have the German steam wax-press.

Pres. York—It is all right outside of Missouri!

Mr. Moore—I think Mr. Abbott had these small bee-

keepers scared. You know how much you expect from your bee-hives and wax-press. The cost is \$14. If you can make 20 per cent, \$2.08, that makes nine pounds of wax per year extra; then you can afford to have a German wax-press.

Dr. Miller—I called it 7 pounds.

Mr. Meredith—Cannot a German wax-press be made on a smaller scale, and price in proportion?

Mr. Root—The way the press is made, the money is in the workmanship more than in the material, and it would be just as hard to make a small one as a larger one. Another thing, the small machine wouldn't begin to be as effective.

Mr. Meredith—In what way?

Mr. Root—You could get about the same amount of wax, but the pressure has to be just about as great for the small machine as for the large, and, if you make a small machine, you have to make it as strong as a big machine, and the workmanship on it requires about as much brains and tools.

Mr. Abbott—What would a home-made machine cost?

Mr. Root—Not 60 cents.

Mr. Abbott—How much better would the German wax-press be? Would it get more wax?

Mr. Root—You wouldn't get any more wax, but you would get it so much quicker. As I said, I can get just about as much wax from the hot-water method as I can with the steam, but it is more mussy, and I have to work harder.

Mr. Abbott—My wife attends to the work!

Mr. Root—May be the bee-keepers are not all blessed with wives.

Mr. France—I was at a local bee-keepers' convention and this subject was brought up. They decided the wax-press was a good thing, but in a small way could they afford it? We, as members of our local association, can afford to own one, and that one press has gone the rounds, and each member has rendered all the wax he has, and at only a cost of 15 cents.

Dr. Miller—I want to say that of all the mean things Mr. France ever did to me, that was the worst. I was going to tell what they did in Germany. That's what they do there. The local societies own the machine. That's the way to bring the price down.

Mr. Root—Isn't it a fact that farmers will club together and get a binder or mower, and then they trade around?

Mr. Smith—They might do that in Ohio, but not in Illinois.

Mr. Root—I know of several who do.

Mr. Wilcox—Partnership ownership of necessary tools is not satisfactory.

Mr. Root—I won't dispute you about that.

Dr. Miller—That's a matter of locality!

Mr. Smith—I was born and raised in Ohio, and I remember we used to have an apple-butter kettle, and that's the way they boiled their apple butter. In the spring, when it came sugar-making time, we couldn't do that because the sugar had all to be made at the same time, and that spoiled the

scheme—it wouldn't work. The Ohio farmers are not as large, and they can work reciprocity more. The great secret to get the wax out is to keep the wax from going into the old brood-comb cells or cocoons that are left by the young bee, and if you water-soak them in warm water—if the wax melts and runs into these cells you have to heat them to get it out. The wax is on the outside between the walls of these cells. Fill the comb thoroughly with warm water, and mash, and then put in the oven wet over a drip-pan, and you will get better results than with an ordinary press, and you can do it at any time.

Mr. Root—I don't see how that can be done in a wholesale way.

Mr. Smith—A man who has 30 or 40 hives—comb that isn't brood-comb—can extract that at any time; but when you come to an old brood-comb and lay it in the solar extractor dry, the cocoons fill, and the center of gravity will lie in that position so it can't get out.

Mr. Root—I have the advantage over the wax-press. I picked brood-comb many a time with a knife and have taken a very small handful of it and put it in a little cloth package in boiling water, and but very little wax could I find in there, and that's doing it in a wholesale way. It is all done in bulk. If a man had three or four barrels, I don't see how it would pay him to do it in an oven.

Mr. Starkey—About how many pounds of wax will ordinarily be taken from one filling of the wax-extractor, of mixed and broken combs? How much wax from one filling of the machine?

Mr. Root—Do you mean with the German wax-press?

Mr. Starkey—Yes, sir. How much will its filling once ordinarily do?

Dr. Miller—Allow me to preface this question with this: How much do you consider desirable to put in at one time?

Mr. Root—10 pounds.

Mr. Starkey—How much wax will you get out of that?

Mr. Root—It averages a little less than three pounds. I remember taking note of the fact that the average was not far from the exact proportion that was obtained from the hot-water press.

Mr. Starkey—I would like to relate a little experience that I had. I gathered together a great many old combs of all descriptions and broken, and some that had a great deal of cocoon. I had possibly a barrel full after it was well packed. I had one of these ordinary 10-gallon wash-boilers, and a two-burner gasoline stove. I filled the boiler with four inches of water in the bottom and set the gasoline stove to going with both burners. I put in this boiler almost two-thirds of this barrel, so as to allow me to stir it as the water heated. On top of that I put a board that I cut round so as to fit inside loosely, and took an ordinary gunny-sack and wrapped it over that so it would be around the edges, and pushed that in snug. I boiled this about 1½ hours while I went on about my other work. I took an ordinary Lang-

stroth frame, and from a point three or four feet from there I put a board about the same height. This frame would go inside the boiler, and the board rested on something else to prevent it from falling over sidewise, and to prevent it from breaking down, and whatever happened to be handy I threw on top of this board and this frame pressed the board down, that I had the gunny sack on, and when I came back it had gone down within six inches of the water, and the water had risen above the slumgum and board. I simply threw off the weight and poured it in. Simplicity bee-hive covers—they will hold about 14 pounds of wax; I poured out 24 pounds of wax from this rendering. I didn't spend more than $\frac{3}{4}$ of an hour. I got very little wax from the slumgum. That would be about as simple, and take less time to get the same amount of wax. I have used the German wax-press and I like it, and I think it is a very handy thing to have, but I can get along so easily the other way that I wouldn't think of buying one.

A Member—You simply used Mr. Abbott's sieve in another form.

Mr. Starkey—The weight is so light that the water boiling would stir up the cocoons that would hold the wax, and allow the wax to escape, which it would always do, to the top, the water being very heavy. The water is a very important element. It is heavier and it gets through the cloth.

Mr. Root—Your method would take a great deal of time compared to these other methods.

Mr. Starkey—In what way? I did nothing but fill the kettle and pour off. I would go and put in more as it cooked down, as it melts.

Mr. Root—Your actual work was little.

Mr. Starkey—Very little.

Mr. Root—That might be a very good way.

Mr. France—Did you clean that boiler or let the housewife do it?

Mr. Starkey—I cleaned it. There was some slum. My wife don't use this boiler. I never let her look at it, even. I scraped the slum out when it was dry. I had no trouble doing it. While I am speaking on this subject I want to say that I wouldn't even ask my wife to let me cook it in her kettle.

Mr. Niver—When Mr. Coggshall is getting old combs and scrapings off of the floor and everywhere else that he gets them from, he puts them into gunny-sacks as fast as he gets them, and at some time when he has not too much to do he puts them in a kettle, sinks in several gunny sacks of this comb, and puts under a long lever with weights on it, and then he goes on out to the barn and presses a carload of hay; then comes back and takes out what wax there is, and commences over again. That is his method under the lever pressure in a caldron kettle with fire under it. That gives heat and pressure.

Mr. Root—Do you think he gets all the wax?

Mr. Niver—He hasn't time to worry much about that.

Mr. Root—That's the question. I don't think the wax can be gotten that way, so much of it, compared to the pressure. In my experiment I found that if I put a great deal under pressure I didn't get it all. The question is whether you want the wax or the time. If your time is valuable, I would by all means use some method as that, or the press when the wax is heated in some other place. If you want the wax, I still insist my method gets it.

Mr. Wilcox—Do they leave it in the kettle cold?

Mr. Niver—It rises to the top of the can. He will have several hundred pounds at a time at work.

Mr. Wilcox—You leave it there to cool. I think I have observed others who have tried it, and there is danger of a little iron-rust coloring the wax.

Mr. Thompson—Has anyone ever used additional screens in the solar extractor for turning after it had gone to the bottom once? I had an extra screen made for mine last summer and I think it was satisfactory. I couldn't find any wax in the refuse after that, where if allowed to remain in the bottom there would be wax on the edges and around the bottom.

Mr. Moore—How many have the German wax-press? [Four.]

Pres. York—Mr. Wheeler tell us about it; you raised your hand.

Mr. Wheeler—I think of nothing but what has been spoken of.

REPORT OF THE FOUL BROOD COMMITTEE.

Pres. York—We will have the report of the foul brood committee. I think they are here now, and perhaps ready to report.

Mr. Moore—A year ago Pres. York appointed three of us as a foul brood committee to co-operate with the committee from the Illinois State Association to get a law through the legislature. Your Secretary, Mr. Kanenburg, and Mr. Clarke, were appointed to act as such committee. I will simply say we did a lot of work, and we got the law. The two associations working together seemed to carry weight with the legislature, and it didn't seem to be a hard matter to get that law through. The law is now on the statute books, for an appropriation of \$2,000 for the Illinois State Bee-Keepers' Association. It had to be in the name of the State Association, first, because it is a State organization, and second, because it is incorporated. The proceedings were very interesting, and if there was lots of time we might tell you about it in detail. There was a lot of work done. Letters and circulars were sent out to every bee-keeper we knew of, to every member of the legislature, especially, members of the committees to which our bill was presented, and representatives of the House and the Senate, telling them the strongest things we could think of on the subject. We told them we had just as good a right to have a foul brood law as we had to have a law against smallpox being carried around in the public schools and along the street. The re-

sult is we have the law. And there don't seem to be any reason why the Association should not have this money appropriation every year as long as they choose to ask for it.

Mr. Starkey—I would like to know if any arrangements or provisions have been made for the members of the bee-keepers' association to get copies of that law or enactment?

Pres. York—It was published in the American Bee Journal.

Mr. Smith—I will just state that a great many bee-keepers think that there is a compulsory clause, and there is not. It simply says: "To be used by the Association for the extermination of foul brood." Of course, if a man has foul brood in his apiary we can go there and tell him so, but we can't make him clean it up unless he chooses so to do. What we would like when the next legislature meets is to have a compulsory clause, so we could do something with the people who are notified that their bees have foul brood and will not clean it up. In my last fall's experience in going over the State, I found people paying no attention to it at all. Some people's bees had it and they were cleaning up their bees but their neighbors across the lots had it and wouldn't do anything. Now there is where the trouble comes in, and at the next legislature we propose to have an act submitted, and we would like the co-operation of this Association to get that passed, because that will be the only way by which we can get relief in the proper way.

Mr. Moore—Have any bee-keepers having diseased bees refused to let you examine them?

Mr. Smith—No, sir; but some might. We would like soon to have a law so that the foul brood inspector can go there and demand the right to inspect all their bees. I guess Mr. France knows something about that.

Mr. Moore—Did you ever suggest to them that there was a way that they could be got at; that they were harboring a disease?

Mr. Smith—They want to know the law right away. I haven't any law. The first question is, Have you a law? If so, I want to see it.

Dr. Miller—I am exceedingly thankful for the appropriation, but the truth is we haven't any foul brood law. There is an appropriation for the State Association, but we haven't anything in the shape of a foul brood law in the State, and we need one. I would like to ask Mr. France how much he thinks he would be helped in the matter; how much difference would it make in your work in the State whether you go with the law back of you, or simply with enough money back of you to bear expenses?

Mr. France—I would feel like resigning my work. I go to A; his bees have foul brood. He is glad to take care of it. B, C and D have a few bees and they don't care, and they are not going to take care of it. Now in Mr. Smith's position he has no authority, and it is pretty bad. It doesn't make any difference whether one colony or 100 colonies have

the disease, it must be treated or it is a violation of the law, and the man allows you to inspect or treat his bees.

Mr. Pottenger—There is a man keeping bees near Kankakee, who says he would like to see someone come into his yard. He would not permit anyone to come in and see it at all.

Mr. Whitney—If you had the Wisconsin law he would.

Mr. France—The first summer out I had to meet men at the gate with a shotgun or a bulldog, who demanded me to—

A Member—The official has the authority of a sheriff, and if they undertake to bother you, give them over to the authorities, and you treat the disease. If a man interferes, put him under cover.

Mr. Smith—That's what we want.

Mr. France—I would suggest that in order to get that law it will be necessary to show how much benefit your Association, through your inspector, has had through the appropriation, and how much more has gone undone because of the need of this law.

Mr. Smith—We will have a report of that kind.

Pres. York—The legislature meets a year from this winter.

Mr. Kanenburg—Why didn't they put in that clause in the first place? When we put in our bill we were a little later than the men of the Illinois State Bee-Keepers' Association, so of course our bill was a little too late. If that clause had been in, I suppose we would have gotten the law just the same. I know Representative Austin would have gotten that just as well as the law we did get.

Mr. Smith—We interviewed the members of the Appropriation Committee and they refused to put anything in in a compulsory way; said that it would not pass, and therefore we put it in this way. We thought this would be an entering wedge.

Pres. York—It was either that or nothing.

Mr. Kanenburg—This law was put out of the tracks altogether, and if it hadn't been for Mr. Austin we wouldn't have had it.

Dr. Miller—As Mr. Smith has placed before us, they would do nothing about a law if you insisted on putting this compulsory clause in it. They said we will give you the appropriation. The question was, Shall we take the appropriation and get a little done by it? and I believe they were very wise in taking it. We haven't any foul brood law. Let's get one. He can tell them at the next legislature, Here, you gave us so much, and we can do so much good with that, but we need a law if we are going to do any good.

Mr. Smith—The idea was this: By getting this appropriation—of course, it was late last summer when we got it into our hands, and too late to do anything to amount to much, and we thought this winter we could have pamphlets printed on this subject and distributed all over the State to every bee-keeper, and published in the farm journals, and

especially in the bee-papers, and in that way we thought we could reach the people so that the bee-keepers would assist us in having a law passed that would make it a penalty, and I think we can do that. We expect to have quite a lot of material printed this winter, and mailed out to all the bee-keepers we know.

Mr. Wheeler—One question in regard to how many people were helped by this law. How many are there here who were helped by the foul brood inspectors of Wisconsin and Michigan? I would like to know who they are, and what report they give. A great deal depends upon what they report, to know what we want. We have listened to the inspectors, now let's listen to the people who have been helped.

Mr. Wilcox—There isn't a man, woman or child here, or elsewhere, but what has been helped directly or indirectly, for everything that helps to promote the bee-keeping industry, helps neighboring States. It helps all who buy honey, bees or supplies; it helps all who have any dealings whatever with bee-keepers, and a foul brood law, in fact any law, that helps the Wisconsin bee-keeper helps you. You are helped by our law, and it is morally certain that all the good we do is shared, indirectly at least, by all.

Mr. Wheeler—Has Mr. Wilcox been helped, or any of his neighbors that he knows, so that the disease has been stamped out?

Mr. Wilcox—If you had the smallpox here in our community the Board of Health would exterminate it.

Mr. Wheeler—We are not talking about smallpox; I am talking about foul brood.

Mr. Wilcox—It is the same kind; it is an infectious disease, and it spreads rapidly and far distant. Our Wisconsin law is copied after the State Veterinary law, and is carried for contagious diseases among live stock with the same powers and duties, and all are benefited because we are benefited.

Mr. Meredith—I will say this in regard to those being benefited. Last year I brought a comb in here, not knowing what the condition of it was, and I found it foul brood, and by following up the treatment as suggested by the Wisconsin inspector I have cleaned up my yard of what little I had. So I have been benefited by knowing that my bees had foul brood, and by using the suggestions about taking care of it.

Mr. Abbott—How long has Wisconsin had a foul-brood law?

Mr. France—Our law now has been running seven years.

Mr. Abbott—It ought to show results.

Mr. France—I don't like to be personal, but going over into Mr. Wilcox's district, I found apiary after apiary that they said they hadn't gotten any honey from for years, and they called it bad luck and a poor season. Another season I came back there and they said they had the biggest crop of honey they had had for years. Now, as to the amount of seven years' work, I have cured over 11,000 cases of it, and

I don't know of but three places where they had it that they have it to-day. What would you do if you had 11,000 cases of some very contagious disease?

Mr. Abbott—I want the real gist of it. You may have cured 11,000 cases, but if the 11,000 cases are cured, are there 22,000 cases left? Here's the point: A noted stutter doctor had a great many patients coming to him, and he had a world-wide reputation, and people were all hunting him up. There was a man going along the street who wanted to be treated. He met a man and asked him about this doctor. He said, "Well, I—I—have known him; he—he—he—c—c—cured m—me." Now, then, that's the question. Have you done it that way, or is it being wiped out of these places? I am inclined to think that it is being wiped out. Can you wipe it out?

Mr. France—We will never wipe it out until all the States have the law. Illinois has imported it. Over four or five times I stopped it coming into my State. To-day I know of it in only five counties, and when I started it was in 50.

Mr. Wheeler—That's Mr. France. Now, the question is, if after Mr. France goes into an apiary and treats it, is that apiary forever cured of it, or apparently for one year or a little time? He may lay it to some other State, or someone else in the neighborhood, but I have my doubts about it, and I would like to know. Stick to the same question that I put first. Are there people here who, after six or seven years, have had foul brood permanently cured by Mr. France or any other State inspector?

Mr. Horstmann—I have cured foul brood. I know that they can do it as well as I can, and people are bound to be benefited. I had foul brood just about as bad in my apiary as I ever heard of, or knew of, and I don't believe there was a bit last year, and I had any amount of it year before last. We want a foul brood law in this State so that the inspector will have a right to go in and examine bees and treat them. I would never hunt up an inspector to come and treat my bees. I would dig right in and treat them myself. The people who will not treat their bees are the ones we want to get after, and if there was a foul brood law we could force them to clean up. I am rid of foul brood now, but there isn't any telling how long I will be. The bees may get foul brood from some other apiary. I cleaned out an apiary to get it out of the neighborhood. Will it return? I may have had a cold last year and have another this year. It is not the same cold. You may cure your foul brood this year and it will be new next year. That's the way I look at it.

Mr. Wheeler—I call the gentleman to order. We are not talking about colds nor about smallpox. We are talking about foul brood.

Mr. Horstmann—We must give illustrations to make people understand what we say.

Dr. Miller—Without using any illustration, let me say to you how I would feel supposing I knew of a case of foul

brood in the apiary of a neighbor. I would send word to Mr. Smith that I wanted him to come there, and he comes. I don't know enough about it to decide whether it is foul brood or not, and I will go with him over to the neighbor's, and the neighbor says, "You go to —, France!" and Mr. Smith and I will have no chance to go in there, and if there was a law back of him we could go in there, at least Mr. Smith could, and I suppose I could go with him if he appointed me to assist him, and we could do what can be done toward eradicating that disease there. Now I am helpless. Anyone who has foul brood can come and set it down within half a mile of my place and I can't help myself, and it isn't germane to the question whether I can tell a man who was helped this much and that much, and it is germane to use something analogous. The fact is that smallpox has never been wiped out. It is in existence now in the same form that it was when I was a boy, and in spite of all the laws and endeavors it continues, but you don't see people marked with smallpox to-day as when I was a boy, because it is suppressed. Smallpox isn't foul brood. Foul brood can be suppressed to an extent. Suppose now it is entirely wiped out. Even then I am safer if I can have done what can be done with a diseased apiary close to me. There is no sort of a question but what a great deal can be done to overcome it. Some of the New England States have foul brood laws; also in Colorado, Michigan, etc. They have them in Canada. They have had them for years. They are tried there. In Canada, Mr. McEvoy did a grand work. If there had been no foul brood inspector, wouldn't it have gone on and wiped out all the bees? They have their bees there in spite of the disease. Now if there is a law that obliges a man to do what he can to crush out the disease, that will be a help to me, no matter if he is clear over on the Wisconsin line. Mr. France is helping me because I am only 15 miles from Wisconsin, and any day it may come—within two years at least—to my place. There is no question but what we need the foul brood law, and the States that do have it don't go back on it. They have it, and don't say it isn't of any use, and we won't have it. We need the law, and we need to do what we can. I venture to say that there is more foul brood in Wisconsin than is desirable, notwithstanding the good work Mr. France is doing, and he will be old and gray-headed, but it would be a great deal worse if they didn't have a foul brood inspector there. We simply have that appropriation, and Mr. Smith has done—I don't say how much, but he cannot do what he ought to do until we get the law. I want it for my own personal security.

Mr. Moore—It seems to me that perhaps this discussion has gone on about long enough, but if you will pardon me, I will give an illustration. How many times, Mr. Smith, have you tried to get a law since 1894?

Mr. Smith—Every legislature.

Mr. Moore—Last fall there was ground broken to get a law for bee-keepers, Mr. Smith and the State Association

had been doing what they could, and we didn't get awakened up until several months later. I think it was in January that we got to talking about it. We decided that the Chicago-Northwestern Association would join hands with the Illinois State Association and see if we couldn't get a foul brood law, so through the American Bee Journal's help and other personal help we went for the bee-keepers. We said, "Subscribe your money, and we will do some work," and with the Illinois State Association we went and got a law. We did everything we could think of. Dr. Miller gave us valuable suggestions which we carried into effect, and we carried into effect every suggestion that our friends gave us. We told them, "This won't do, but it is one of the things we must do to get a law." A day was appointed, and our Secretary had the honor of going to Springfield on the day the bill went in, and the committee on appropriations for the House and for the Senate both had their hearings the same day, and very kindly listened to the committees addressing them. Our Secretary went to the State House and got a copy of the bill as introduced. It was our intention to follow the Wisconsin law as we supposed should be done. The members of the Illinois State Association said they consulted with their friends close to the legislature, and that they failed every time so far since 1894, and were told that if they put a bill in with that clause in it they would fail, and consequently introduced a law that would pass. When our committee got there we found it had already been introduced by a member in the House and a member in the Senate. I personally consulted with Mr. Austin, a friend of Mr. Kanenburg's. I told him it was a personal matter in which I was interested, and then asked him as a friend to push it. I talked to him at great length. He talked to me about this drastic clause. I said, "Mr. Austin, we are going to have that in the law."

When I got to Springfield I found the bill was already introduced. We could go on and introduce another bill if we chose, or Mr. Austin would introduce it for us, but our friends said if you introduce another law the chances are we would kill both of them, so we decided it was best to get what we could this time and hope for better things in the future. Mr. Austin said, "What is the matter with it? There is no clause in there for compulsory inspection." I explained to him that they had already started their bill through the grind, but I said, "Mr. Austin, I tell you, if it comes to me to enforce the law, I will put in motion the machinery we have aside from the Wisconsin law to compel any given party to submit to proper things. I said there is a general nuisance law under which any person can be prosecuted." I would first write to such a party, "We have information that you have foul brood in your apiary, and we recommend you to submit to the treatment." If he doesn't answer, I would say, "Now, sir, a certain day we shall prosecute you before this court for maintaining a nuisance." I tell you, ladies and gentlemen, I believe in a majority of cases moral suasion

will work, but this authority of prosecution, that is my thought, and as I explained it to Mr. Austin, and if any case of that sort comes up to me I will make these people, and if I am backed by the Association, I will carry it into court and do something under the nuisance act. There is a nuisance act, and it will cover every possible case of a nuisance.

. We have been blamed for not getting what people thought we ought to have gotten, and I spent weeks on this question, and felt sensitive that we were blamed for **getting** half a loaf when we ought to have gotten a whole loaf. We would have gotten nothing. That is the situation, and Mr. France has said if we make a showing before the next legislature that we have done well, as good and faithful servants, they will give us any law we ask them. They fired questions at us. Why didn't you get your law last year? It is a point in our favor with the next legislature that we got some kind of a law at the hands of the last legislature.

Mr. Wheeler—You may think I am overbearing. I am interested in this question, and I would like to hear from the people who have been helped by the state inspector. I don't care to hear from the people who have wax or foundation to sell, and people who are inspectors, but from the men themselves who are interested and have bees.

Mr. Smith—I will just state that the men who are here are practical bee-keepers, and they are their own foul brood inspectors. A man that will allow foul brood to come and stay in his apiary is no practical bee-keeper, and I don't believe a man of that kind would belong to an organization. Outside is where the trouble comes. I was within 17 miles of Dr. Miller's, I was near Crystal Lake, as far as Mattoon, and south to East St. Louis, and Danville, and when I was out 20 days I had visited 42 apiaries, and there were over 300 colonies that I treated. You see, I only had 20 days to do it in. I would have been out longer only sickness at home brought me back. I was due up at Kankakee, but the season got so late we couldn't do much. We all have to work together, and if there is any bee-keeper who knows of a case of foul brood it is his duty to correspond with the inspector and have it treated. We have men in this State that are selling bees and queens that have foul brood. I want to get after those fellows. They are the ones that are scattering it broadcast. I lost 82 colonies of bees by buying queens. Two of my neighbors near by lost 102, and another lost 42. It wiped their apiaries clear out. They didn't know what was the matter until they were all gone. They brought their queens from the same party. I understand this party has been buying bees promiscuously and shipping them all over the State. He doesn't care anything about it. I understood parties in Cook county bought bees of him, and they were all diseased, and their apiaries had never had it before. If we can't work as a unit as bee-keepers, we can't do any good. We want to all stand together. If you know a case in your county, it is your duty to report it.

Dr. Miller—I didn't know there was one.

Mr. Smith—I don't believe all foul brood will ever be exterminated any more than smallpox.

Dr. Miller—I would like to have a minute and a half of private conversation with Mr. Wheeler. If you had no foul brood in your own apiary, and there was a case that you knew of within a half-mile of you, a man who had one colony, and that colony was rotten with foul brood and you knew it, would you, or wouldn't you, want to oblige that man to burn up that colony or treat it in some way? Wouldn't you want the chance to say that he *must* do that? You know you would. I want to tell you that if it comes to that, you won't stop to ask how many have been helped by it. You would say, I want that law right here now to help me.

Mr. Wheeler—I couldn't answer that. It would take too long. I rather think I would treat that with moderation.

Dr. Miller—You would want to force them.

Mr. Wheeler—You are not the man I took you for. I have other reasons.

Mr. Abbott—This is a matter in which I have been trying to get certain facts before the public. I understand there is a reporter taking this, so we want to be careful what we say. There is no use of Dr. Miller talking to Mr. Wheeler, and Mr. Wheeler talking to him. It is a fact that no man can get around, that legislative committees are influenced by facts, and not influenced solely by the facts that are presented by the official. If the official, when he gets there and makes his statement, cannot have it backed up by the individuals who have been helped by these actions, that report of that official will not be worth very much before the legislative committee down in Missouri. What I was after was to get such facts from the people who had been helped as would make a tremendous leverage under the legislature of Missouri so as, if possible, to boost them up and give us a law. What we want is combined influence. Co-operation. How? If these bee-keepers have been benefited in Illinois, and they have been benefited in Wisconsin, and they have been benefited somewhat in Michigan, is it not possible to use this as an accumulative force to use in other States? That is what Mr. Wheeler is trying to get at. I expect to be before the Missouri legislature to talk on this subject, and I want something to talk about. I don't want to have to say the commissioners report so and so, but I want to be able to say that the people who have the bees say so and so, and we are interested.

Pres. York—There are hardly enough here who have been helped. In Illinois we haven't had the inspector long enough. There are only a few bee-keepers here from Wisconsin, and only two or three from Michigan.

Mr. Johnson—It seems to me as if the question to be discussed is as to whether it would be important for us to have this compulsory clause in this law. The law we have is good for Illinois. If I get foul brood among my bees I can send for Mr. Smith, and he would come and rid me of

it, but if my neighbors have foul brood, which they very likely will have if my bees have it, Mr. Smith can't go over and do anything until they are willing to have him, and if they are willing he can do so, and in that way if the neighbors are willing the law is good and it is all right just as it is. It would make it more complete if we had this clause in it, and that is just what we want. What encouragement can this committee, Mr. Smith and others, give us that we can get this in the next legislature?

Mr. Starkey—I would like to address myself straight to the question if it were possible. The question is one supposed to be answered by the people who have had benefits. The very fact that this law has been in force only a very short time, and that possibly with the exception of three or four people in this house, and also the things that have been done could not apply to the question of the gentleman because none of the work that has been done has been done more than three months, and if that is true, no man could get up and say that two years ago I had some things done and it is well done. I believe the question is not appropriate under the conditions of this convention.

Mr. Reynolds—Mr. Wheeler was talking about the law in Wisconsin.

Mr. Starkey—The Wisconsin people are not at this convention. My statement is still true. It cannot be answered in this convention.

Mr. France—I may be considered as a man having an ax to grind. The bee-keepers of the United States—why, I don't understand, but the conditions are so. Say I am inspector of Illinois, and I should go to one of your apiaries and find the disease there. It would be treated. If in my annual report I would say I have been to Mr. York's apiary, he having supplies to sell or queen-bees to sell, or he even buying and selling, the making public of the fact of foul brood the bee-keepers would ignore him and they wouldn't touch him, or put their hands on him. Experience has proven that we must not publish the names, but if you want a list of those whose bees have had foul brood in Wisconsin, and have not got it now, I can give you pages of them.

Mr. Coverdale—Nineteen years ago foul brood was introduced right close to me. It happened that I was right on the ground and saw it before it got into more than three colonies. These colonies were hunted up and treated, and exterminated, and banished on the spot. If I hadn't seen these we wouldn't have been able to do that. There isn't a case of foul brood among my colonies now. I think a great harm was headed right off. I believe in extermination of foul brood. I thought I did a grand thing.

Mr. Wheeler—I doubt if those bees had foul brood at all.

Mr. Coverdale—I am familiar with it. I can tell or smell it, or if any other bee-disease, I can tell it.

Pres. York—I think so.

Mr. Smith—If there are any in this audience that haven't seen foul brood, or don't know anything about it, I

have a full comb of it in the other room. They can go in there and acquaint themselves with the condition. If you get a smell once, you will never forget it.

Mr. Duff—We bee-keepers in Cook County ought to know the names of the queen-breeders who sent out diseased queens. It is only just. An ounce of prevention is better than a pound of cure.

Mr. Smith—I will just state that in this case I judged from the results. They were persons whose bees never had foul brood until they got queens from that dealer.

Mr. Duff—I should think that would be enough.

Mr. Smith—That man has an apiary at his home place, but I understand that he had three out-apiaries. I am going down there to demand inspection of his apiaries, and he will say, "That's where I rear my queens, go and look at it." I look there and find no foul brood, but I don't know the condition of his out-apiaries, and as long as I have no law to go there and demand an inspection, he might say, "My bees are all right, and you mind your own business." Until we have a law of that kind I would not be willing to say who the party is, but Mr. York knows those in Cook County that have had queens from him, and their results are the same. They never had foul brood until they got queens from that dealer.

Mr. Hogge—The main point is, Do we want help from the legislature in the way of this compulsory clause. It is not a question whether somebody has been done good or not, but the question is, Do we want the inspector to be empowered so that he can go in case we do know, or do believe, there is foul brood near us?

Pres. York—Do you want to put it to a vote?

Mr. Hogge—Yes, sir.

Pres. York—All in favor of having such a compulsory foul brood law in this State, raise your hands. [Practically a unanimous vote in favor.]

Mr. Clarke—Foul brood being carried by queen-bees, I would like to know in what way it is carried.

Mr. Smith—By the honey that is in the queen-cages, and by the no doubt taking out the infection of the queen-cage. I think it can be carried that way.

Mr. Kanenburg—As long as we have voted that we want this compulsory clause in the law, I wish to make a motion that—

Mr. Moore—Some of us may not know that the legislature meets only every two years, so nothing can be done until December, 1904. This is merely breaking the ground for what we want to do at that time.

Pres. York—What will you do with the report of the foul brood committee? They can do nothing more until the legislature meets, which is a year from this fall.

Mr. Starkey—Thank the committee for its work, and discharge it.

Dr. Miller—I want to mention one point which possibly might surprise you a little. There was a certain amount of

money raised to pay the expense of the log-rolling that was to be done to get what legislation we could get. As you know, there were some of us who were appointed an auditing committee to look over the accounts of the treasurer, and one of the items that surprised me was a certain sum, something like \$9.00, that was turned into the treasury of this society that was left of the amount raised to pay for the work of that foul brood committee. Now, I would like to know why this committee didn't use up all the money in junketing? I don't understand it. So instead of this society being out any money, it actually made a profit out of it!

Mr. Horstmann—I like Mr. Starkey's motion, with the exception of discharging the committee. I think they should be continued. I offer an amendment, that the report of the committee be accepted, that we thank the committee, and that it be continued.

Mr. York—With the consent of the second we will make that the motion.

A vote being taken, the motion was declared carried.

ELECTION OF OFFICERS.

The annual election of officers was held at this stage in the proceedings, with the following result: President, George W. York; Vice-President, Mrs. N. L. Stow; and Secretary-Treasurer, Herman F. Moore, of Park Ridge, Ill.

MOST PROFITABLE STYLE OF SECTIONS.

"Which are the most profitable sections for the producer, the beeway or the plain?"

Pres. York—How many think the beeway sections are the most profitable? Eight.

Pres. York—How many think the plain sections? Seventeen.

Pres. York—How many have tried both? Nineteen.

Pres. York—How many think it doesn't make any difference whether plain or beeway? Three.

Pres. York—How many don't know? Eight.

PRESENCE OF DRONES AND SWARMING.

"Does the presence of a large number of drones tend to intensify the swarming tendency or impulse?"

Pres. York—How many think it does? Six.

Pres. York—How many think the drones don't make any difference as to the swarming tendency? One.

Mr. Wilcox—How many think the swarming propensity tends to increase the number of drones? [Sixteen.]

Mr. Whitney—I asked that question. On examining my bee-hives I found a large number of drone-combs. I never had so much swarming in my life among my bees. I had 31 colonies to start the season with and I had 54 swarms. I thought I knew how to keep down swarms. I increased, gave them plenty of room, cut out queen-cells and did every-

thing I could do, and yet they swarmed, and I never saw so many drones as I had.

Mr. Moore—I would like to ask in this connection, when you control the production of drones by workers, can you thereby solve the swarming question?

Dr. Miller—No, you can't do it; and I would like to say to Mr. Whitney that he will find that there will be years when he will have exactly the same amount of drone-comb in his hives, and possibly with the same amount of drones, and he will have swarming more than other years. With quite a number the last season was an unusual one for swarming. It has been one of the worst years for swarming that I ever knew. I know I spoke of it more than once. There seemed to be a scarcity of drones, the smallest number of drones I ever had was this year, yet I think it was about the worst year for swarming. The two things don't always bear the same ratio. Mr. Hutchinson says that if it wasn't for the swarming you wouldn't have any drones. The two things are not always in proportion.

Mr. Starkey—I noted that drones would tend to increase swarming, but by doing so I meant this: That instead of drones, if the same amount of labor had been expended in producing workers we would still have had the same amount of swarming tendency. I don't believe that the presence of drones would increase it any more than the workers themselves. However, I believe that it would be an advantage to the colony in point of the value to the honey-producer if these drones had been prevented.

Dr. Miller—If you suffer a large number of drones in your apiary you will have more swarming, and I believe if you allow a large amount of drone-comb in your hives you will have more swarming for it. One of the means to help cut down swarming is to allow as little drone-comb as possible to remain in the hives.

Mr. Longsdon—You may put a drone-comb into a very small colony, but the colony that doesn't show any tendency at the time of swarming, and immediately, almost, if other conditions are favorable, that colony will swarm. I know it is the change of the drone-combs that does it. I believe the drones have a very great amount to do as regards the swarming of bees.

Mr. Whitney—I attempted to prevent swarming by cutting queen-cells. I had a hive-box that I would put the queen in, and turn it in front of the hive so the swarm couldn't get back, and they would all cluster in that box, and I cut the queen-cells out. They would work for some time; perhaps put in a case or two of honey and then swarm. I had one swarm come out with 200 or 300 bees, and I made them a hive and they are a good colony of bees today; but there was only about 200 or 300 bees in the whole swarm, so you see what I produced with the queen. She gathered 200 or 300 bees and they swarmed out in a cracker-box. I merely mention that as the tendency of swarming in my yard, as one bee against four.

Dr. Miller—A single bee never swarms.

Mr. York—That's so; I believe they have to get married first!

Mr. Duby—I don't believe a large or small number of drones has anything to do with it. I have had colonies that swarmed three times, and they had but very few drones, and I have seen lots of drones and have had no swarming.

Mr. Hutchinson—Mr. Aspinwall is now working with a non-swarmping hive. I believe he spent \$1,000 in making wooden combs and his idea was that the bees wouldn't rear drones, and he was going to get rid of swarming that way, but the bees swarmed just the same with those wooden combs.

METHODS OF WIRING BROOD-FRAMES.

"Why are brood-frames wired horizontally and not vertically?"

Mr. Hutchinson—I have seen a great many that were vertical.

Mr. Baldrige—I wire all of mine vertically. I never had a pupil that went to the horizontal wiring.

Dr. Miller—I have had lots of them wired both ways. One reason for the horizontal wiring is, it doesn't make any difference with the strength of the top or bottom bar. A good many have found by wiring vertically that there was a tendency to draw together. The horizontal wiring is not affected in that way. Mr. Hutchinson says put in an upright stick to hold that. Yes, some have used that and some have used a piece of tin, but that's so much more machinery. For myself, I prefer to put in several little sticks.

Mr. Baldrige—The reason, perhaps, that I wire up and down is because I commenced that way, and I found it a very good way. I don't have to have a saw-kerf. The top-bar is 5-8 thick, and the bottom-bar is 3-8 and I use only six bars in a frame. I don't fasten my foundation at the top at all. It is not necessary to fasten it at the top, and it is not necessary to have a saw-kerf to insert, neither one, if it is wired properly, and I can use narrow strips. I use the standard shape of frame. I put all those strips on the perpendicular wire, and I use every particle, and when they are done you can not tell that they are made of strips. You can use a half inch or an inch strip that way.

Mr. Whitney—Do you split those strips?

Mr. Baldrige—No, they are all woven together, and just as nice combs as though of solid foundation.

MATING OF A SUPERSEDED QUEEN.

"If a queen is superseded in the fall and not fertilized then, will she be fertilized the next spring?"

Mr. Hutchinson—I don't know.

Mr. Moore—She may be sometimes.

Dr. Miller—The Atchleys reported a number of cases in which the young queen superseded in the fall laid in the spring, but I think they claimed the queen would be fertilized in the fall and didn't lay until the spring. For my-

self, I wouldn't give very much for the chances of a queen being a good queen if she didn't lay in the fall.

Mr. Abbott—The probabilities are she will not be a good queen. If she is superseded she will not be. She will be dead.

SOUR HONEY IN THE BROOD-CHAMBER.

"Can the case of sour honey in the brood-chamber be explained? That is, where honey sours in the brood-chamber?"

Mr. Wilcox—I think it can be explained, but I don't see how it can be helped. I have seen sour honey because it was gathered from something that was sour before it was gathered, and also because it absorbed so much moisture from the temperature. It was a very weak colony, and it got just warm enough so fermentation would commence; but the main cause is where it is gathered from some sour substance.

PRICES OF EXTRACTED AND COMB HONEY.

"What price must extracted honey be sold for to make the average colony as profitable as it would be if run for comb honey which sells for 15 cents per pound?"

Mr. Baldridge—That depends upon whether you are going to wholesale or retail it. No man has any right to sell extracted honey for any less than comb honey at retail. I charge the same price and I give my customers their choice, and my books will show that 90 pounds in 100 are extracted. What is the use of giving your honey away? I was in existence as a bee-keeper before extracted honey was brought about. Nobody would ever have asked bee-keepers to have done it if they hadn't done it themselves.

Dr. Miller—Mr. President, Mr. Baldridge isn't answering the question at all.

Mr. Baldridge—Fifteen cents.

Mr. Wilcox—That is a subject that I commenced studying a good many years ago, and I thought that I could find it by referring to the back numbers of the American Bee Journal, and I spent a week at it, and now I am obliged to guess at it, that about two pounds of extracted to one of comb is an equal matter with the average. Of course, conditions vary one season with another, and one locality with another, and there are several circumstances to be taken into consideration. It is a very practical question, and a very important one for beginners. I wish to get at the facts. I produced comb honey for ten years exclusively, and I was satisfied then that that it was the most profitable, and I changed finally to extracted because my locality produced principally dark honey, and I am sure it is more profitable than the comb. I tried again to produce the comb honey but I can't produce it now as well as I could 30 or 40 years ago. I believe I have lost the art. I think when you take into consideration the losses, and risks, and breakage, that it is about a fair and equal thing to us, and that the price of comb honey should be just double the price of extracted. That's my rule.

Mr. Horstmann—If you sell comb honey at 15 cents a

pound I think extracted ought to be sold for 10 cents. I have produced both comb and extracted and I watched it very closely. I produce more extracted than comb. I get 15 cents for extracted honey and 20 cents a section for the comb honey, and I am satisfied that the extracted honey at 15 cents a pound pays a good deal better than the comb honey at 20 cents a section. There is no section to buy, no foundation to buy, and after we have our frames in shape we can use them over and over again, and there is less labor and it is a great deal less expensive. The first cost is the principal cost, and I believe about 10 cents a pound would make a fair price for extracted, while comb sells for 15.

Dr. Miller—That's one of the questions that's perennial. It began shortly after the extractor began, and it will be a question for every beginner when you and I are dead. Mr. Wilcox stated the full case when he said circumstances vary. One man says it ought to be the same price. Every locality is different. In many cases they ought to be just about the same price. In other cases about twice as much. There is a man sitting before me just now whose father years ago made fun of me because I would do anything at producing comb honey at all. I could do much better by producing comb. It wasn't difficult for me. What is true for this year may not be true for me ten years from now, and you will never get that question settled so that you will have one answer that applies all over.

Mr. Moore—It is so hard to cover the whole case rightly so that somebody won't be under a misapprehension. After selling honey 17 years it is my conviction that when you sell to the consumer you should sell comb and liquid honey at the same price. When selling to the wholesale trade it is a different case. You must get as much as you can. To us who are catering to the city trade it is an entirely different thing from those who are catering to the country trade. I have been told that I ought not to sell extracted as cheap as the comb. It is worth more to eat. As long as the trade is better satisfied to pay comb-honey price I say charge them the comb-honey price every time you sell to the consumer.

Mr. York—I was in the honey business long enough to know that honey is worth all you can get for it.

Mr. Niver—I wanted to know in a large apiary what was the relative proportion of comb honey and extracted honey that could be produced on the average, and how many colonies could the apiarist or operator handle well during the same year to make it the most profitable for his time to run for extracted or comb, provided comb was selling at 15 cents. What would be the market price for extracted honey to make it equally profitable? Of course, the sections, the foundation, the work, all put in, and the breakage, amounts to three cents per section on the average.

Dr. Miller—It is a little bit high.

Mr. Niver—I can take care of about three times as many bees for extracted as for comb honey during the season.

Dr. Miller—Do you mean taking in the expense?

Mr. Niver—Yes, sir.

Dr. Miller—It is hardly high enough then.

Mr. Niver—If I can get twice as much extracted from a colony as I can of comb, and take care of three times as many bees, I could sell the extracted honey at 5 cents, and make as much money at it as I could selling comb honey at 15 cents. That would be about my judgment.

Dr. Miller—There is that "if."

Mr. Moore—I want to call on a gentleman here to answer that question. He is very modest and seldom talks unless he is called on. What can the average bee-keeper do in producing comb and extracted honey? If he produces 1,000 pounds of extracted, how much comb can he produce? Mr. France, will you answer that?

Mr. France—That has been fairly well answered. Generally speaking, I find about two pounds of extracted to one of comb, taking it over Wisconsin. The amount of labor is less in producing extracted, and the labor and expense of producing comb are more.

Mr. Moore—Do you mean to say that Wisconsin produces twice as much extracted as comb? That isn't the point. The question is, If a man with 100 colonies can produce \$1,000 worth of comb honey, how much extracted can he produce with the same colonies, the same year, in the same conditions?

Mr. France—About two to one. I think Mr. Wilcox one year set apart a portion of his yard and it went a little over three, did it not?

Mr. Wilcox—More than that.

Mr. France—I know that he was so converted to extracted honey that he has produced hardly anything else since.

Mr. Starkey—This question is raised. If an apiary has produced 1,000 pounds of comb honey in this locality I would rather think they could also gather 2,000 pounds of extracted honey; that this locality would be suitable for twice that number of bees if run for comb honey. I see in that a solution of over-crowded districts, where people running for extracted get 2,000 pounds of honey, twice the number of bees will certainly get the honey and store it in combs.

Mr. France—I was a little interested right along that line, so I took my home yard of 100 colonies half for comb and half for extracted, and kept a memorandum of it, but I wasn't satisfied with one year. That year it ran three to one in favor of the extracted. The next year it was two and one-tenth in favor of the extracted. It varies so with seasons. There are other reasons more than the pounds of honey. You must put in the additional labor and additional cost. It is the net profits you are after.

Mr. Wheeler—There is one point that has been overlooked, and that is the weight of the hive when the bees are ready for winter. I find if you produce comb honey you have a colony that's better prepared for the winter than when you produce the extracted.

Mr. Longsdon—I am somewhat of the opinion that we are exaggerating the amount of extracted honey that can be produced over the comb. I will have to quote that old

saying, "In my locality." There were three or four bee-keepers out there, and they had had considerable discussion about this extracted and comb honey business, and one man was radical on the side of comb honey, and he didn't believe that they could produce so much extracted. One of them ran about 40 colonies for extracted and the other ran 40 for comb, and they came out very nearly even, and they gave both parts of the apiary the same kind of care. By the way, the one party who ran entirely for comb took more comb honey than any of the other parties did of extracted, and all in a circle of five miles, and the locality was very nearly the same. The one comb-honey man took and weighed it carefully, and I helped him weigh it. By the way, he produced it in two-pound sections, and he took 215 pounds of comb-honey to the colony in big hives, 35 of them. I agree, although he is perhaps a little too much on the other side, but I believe extracted ought to sell for very nearly the same amount as comb.

Mr. Wilcox—Supposing there were 225 pounds of comb honey to the colony, then we will agree that there should not be much difference in the price.

Mr. Horstmann—There is a great difference in localities, judging from the report of my own colonies this year. The best colony I had this year produced 139 pounds of comb honey. I had a double-hive colony which produced 163 pounds of comb honey. The best for extracted was 117½. Now, you see the comb honey is away ahead. It must be the locality; I don't know what else. I have never yet produced twice as much extracted honey from one colony as comb. There has been many a time that I have produced more extracted than comb, but very seldom.

Mr. Meredith—Perhaps it might be that the man that is running for comb honey might be able, with his manipulation, to produce more comb honey than extracted; but at the same time a man like Mr. France could double the amount of extracted over comb.

Mr. France—I would plead for the rest of the country not to be as my own State. Many of the bee-keepers in Wisconsin, when they have hold of the extractor handle they don't know when to stop. They extract too late.

Mr. Wilcox—There are some bee-keepers that can have all of the honey put into the supers so that the bees scarcely have any to go into winter quarters with. That's in the management.

Mr. Moore—There is a whole lot of this that enters into the comparative production of comb or extracted honey. The bees, of course, fill the comb all new. If you make them build the large frames out of which we take extracted honey of new—if, as in my brother's case, you have thousands or tens of thousands of empty combs which simply have to be filled with the liquid honey by the bees, you might get a great deal more extracted honey than comb honey.

Mr. Longsdon—The parties had the combs all stacked away—nice, clean combs, and the test was given fair and square in favor of the extracted business.

Dr. Miller—You may go over this ground for ten years and you will come out where you went in. There is the same man, and he says I got three times as much one year, and then he tried it again another year and he says it was a mistake, he got only two and one-tenth that year. If the same man in the same place finds that one year doesn't give him the same results as the other, you may change your man and change your place and you will have a different result again. When a young man comes to me and says, What shall I do? What is the ratio? The only answer is, Try it and see. You have to try it for your own place, and your own management, and you may thrash this over until after bed-time and you won't be any nearer to a solution.

Mr. Baldridge—Mr. France says he had three times as much one year and the next year two and one-tenth. Now, perhaps the third year with more experience he won't get that proportion.

Mr. France—I would say that these things vary according to the season and management, and we may thrash this over and over and you will find that that is the experience of every man.

Mr. Clarke—As regards the extracting yards, especially in Wisconsin, a few years ago we heard of a great loss of bees. Wasn't it a fact that 90 per cent of these losses came from where they extracted?

Mr. France—I would put it at that per cent. Quite a portion of them were. There were a great many places where the bees worked late in the fall, and there was something gathered from the marshes and it caused diarrhea, and the bees died.

Mr. Clarke—I think it was about five or six years ago. I know it was a general discussion that the extracted was paying down to the ordinary time, but that everything had fallen off, and that they had bees they couldn't and wouldn't feed. That is the year that we had low-priced honey, and it seemed the extracted part of it came mostly from the extracting yards.

Mr. France—It is largely so, and I was disappointed this year when I got back from the National Convention in going over the State. I put the question: "In what condition are your bees for winter?" And they said: "They are working nicely." I said: "Have you opened the hives really to know?" No, they had not, and to their surprise what they thought was wintering supplies had been used up. I can't account for it. If they own a horse or cow they will feed it up to go through winter, but they let their bees starve.

Mr. Abbott—Down in Missouri I can produce a little over twice as much extracted as comb. I buy it with my money!

RETURNING SWARMS AND CUTTING QUEEN-CELLS.

"In case the queen is taken from a swarm and the swarm returned to the parent colony, would the colony be likely to swarm soon again, providing all queen-cells but one are cut out?"

Mr. Hutchinson—No.

Mr. Whitney—I should say yes, because I had some colonies swarming three or four times.

Dr. Miller—Did you cut out all but one?

Mr. Whitney—I returned the queen, but cut out every queen-cell.

Dr. Miller—That wasn't the question.

Mr. Whitney—I have had that occur as stated in the question, but not frequently. It did occur.

Mr. Wilcox—I am inclined to think they would. If you cut out all but one they will build more queen-cells if conditions are favorable.

"SHOOK" SWARMING AND COMB HONEY.

"Can shook or artificial swarming be successfully carried on while producing comb honey in several out yards?"

Mr. Smith—You can successfully shake your swarms, but it will cut your honey crop short. You haven't the same amount of bees to work in the sections when you divide a colony.

Mr. York—According to Mr. Smith the "shook" swarming is successful whether the honey crop is or not!

REPORTING THE HONEY CROP.

"There is no honey exchange or 'trust' of bee-keepers to protect me on the *price* or *value* of my honey, then why should I give the amount of honey I produce to the public, for the benefit of the tradesman?"

Mr. Starkey—I would like to answer that by saying that he would be compelled to do it for lack of time to peddle it out himself. He can get his price for the honey if he will go to the consumers and give it to them in the quantity that they want, but that takes time and labor.

Mr. York—Why should he publish the total amount?

Dr. Miller—I think possibly the question may refer to this: It is a common thing each year for some of the large dealers to send out questions to those who produce honey in quantities, and find out how much honey they have. Asking them what is the crop in their region. Why should I give this advantage to these large buyers?

Mr. Starkey—He should do it only for ignorance of his own interest, because if he has a large crop—at least to give them this knowledge would have a tendency to lower the market price of this honey. If he informs the honey dealers that there is a large crop they will be less inclined to bid high. He would do it only through ignorance.

Mr. Whitney—This question brings to mind the report I saw from the Rockford convention in northern Illinois. That report gave information to dealers that the Northwest here was flooded with honey, and that it could be bought at 10 cents a pound without any trouble at all; that people were rushing about to give it away. It apparently came from the report of that convention. It occurred to me that

bee-keepers were very unwise to publish the amount of honey they had; that they were too anxious to get rid of it. I haven't tried to dispose of any honey, yet I have sold it, nearly all. I wouldn't give a dealer a report of the amount of honey I had on hand if he should ask me.

Mr. Longsdon—Mr. Whitney is getting down to where the originator of that question wanted to get and he mentioned the Rockford convention. Prior to that convention, in our little town, surrounding us honey was selling cheap, selling for 10 cents a pound for comb honey, extracted for 8, and there was considerable of it being disposed of at those prices after that Rockford convention. They read those reports, and the little country papers copied them. I had parties come to me and tell me that we were robbing them, that honey ought to sell for 5 cents a pound; people went crazy over the low price of honey. Therefore that question was asked to get at whether or not we, as bee-keepers, are protected by some kind of a deal or trust—whether it wouldn't be just as advisable to keep to ourselves these tremendous amounts of honey which are generally multiplied by four or five, and be selfish for our own interests.

Mr. Wilcox—I was just going to remark that there are two sides to every question. I do when I am asked, and I am asked every year, and I am asking others every year. I want to know, and you want to know, everybody wants to know who has anything to do with it. I would much rather tell these men who ask, than to have them get the information from someone else. If the facts are to be published, I would rather give them the true ones, because I prefer to be a little careful about what the reports are, was my reason for not wanting that statement about getting 300 pounds of comb honey in a colony to be printed. There may be a possibility of that occasionally, and it would be cited and quoted and remembered as a common thing. I believe we should withhold such large statements, especially when talking before a reporter. Talk common, practical facts. We can tell the truth and still tell it so it will not become an exaggeration. I believe we should give these reports to everybody who wants them, and let them publish them if they wish. They will find out anyway before they will trade. I won't buy until I have some idea what the crop is. They must know, and will know, and I don't believe in trying to conceal it from them. I am in favor of making the reports myself, and having all the rest of the bee-keepers do it, but I want them to be careful and consider who they are talking to, and what the facts generally are. Not one particular colony or apiary, but the crop of the country, the district in which they are living. Have some regard for consequences.

Mr. Moore—There is no doubt at all in my mind but what the bee-keepers of our country are out tens of thousands of dollars each year by unwise actions. It is actually a case of self-preservation. This is a little off the question but it just shows how unwise we are. I will put it at 50 to 200 tons of comb honey was dumped on the Chicago market to

be sold; that would have been enough for four to six months. In all my travels I never saw so much. I saw 25 or 35 cases of comb honey in one place, and the distribution seemed to be general all over Chicago. Some told me that they had paid 10 cents, 11 cents, 12 and 13 cents, and one firm with three or four stores were retailing their honey for 14 cents! The market was simply knocked all to pieces by this dumping of honey on the market, and people have been after me again and again. They know I have honey to sell and they say: "What are you asking? Not asking much are you?" I don't believe, far and wide, that we have an average crop. I really believe that there is not over an average crop, but by an unwise dumping on the market you are out two, three and four cents on the pound. The grocers said to me so and so out here had 10,000 pounds of honey, as much as to say that that was something. I say, keep those things in your own bosom. Other trades keep their business to themselves. Do a lot of thinking, and do very little talking. If they ask you what the crop is, say: "Well, about the same as last year, near as I can tell." Don't tell them that there is lots of honey, or I had 10,000 pounds, or my neighbor. "Be as wise as serpents and as harmless as doves," and everyone will gain.

Mr. Whitney—I believe as Dr. Miller does: I don't know.

Mr. York—Mr. Muth, what do you think about it?

Mr. Muth—I believe in honesty. I believe when we have a big crop of honey throughout the country, dealers should know it, because the law of supply and demand makes the price. Suppose we would buy a carload of comb honey at 16 cents, as it started off early this season, and we didn't sell that carload? (I am talking from my standpoint now). There is a concern in Nevada who a year ago sold us three or four carloads of honey. They start off and offered me a carload of honey this season at 16 cents delivered in Cincinnati. I told my book-keeper they will holler a little bit, and then they will come down to 15 cents. It was no more than two weeks until they came down to 15 cents. I says, "They are scared. There is honey coming in. They will sell for 10 cents before the season is over." I never even answered their letters. It came down to 13½. Two weeks ago they offered to deliver a carload of fancy white honey at my plant for 12½ cents. I told the young lady: "It will come down to 10 cents." It is the law of supply and demand that makes the market. If you are selfish it will burst. Here, on the other hand, you hold up your honey very high. It was only this morning that I sold 15 barrels of honey before I started; this was before nine o'clock, at a price that none of you folks would want to sell me your honey for. I have to go outside to buy this honey. I will duck under you and beat you every time. You hold up your end and I am glad of it. It is the law of supply and demand; it is finding its level. These people in the West who have big crops of honey, they will come down. If you want to select your price for honey get it out earlier. Honey that is produced in May—get it out. There is a demand early in June and

July. If you wait until everybody wants money you are too late. If a dealer pays 16 cents and the next competitor buys it for 12½ cents, how long will a fellow last in business? I don't believe everything I read in the paper even if it is in the American Bee Journal. I have my own deduction of this. When there is a big crop you don't tell the truth, and a man who keeps the truth from the general public—well, I will tell you it is not right for the general public. It has made the demand for all the honey that's produced in this country; the individual bee-keeper, not at all. There are others. There are people in the West that don't know a queen from a drone that handle carloads. These fellows dig in; they sell honey. You don't care, you abuse the dealer. You have got the wrong fellow. You want to get at the National Bee-Keepers' Association to promulgate the uses of honey. There was one fellow in California, I believe, three years ago, who had an awful crop of prunes. They said prunes were scarce, and the wholesale grocer throughout the country knew better, and they simply kept the prunes. In San Francisco they had 500 cars of prunes to put in storage, and it wasn't any time before the association advertised throughout the State the good uses of prunes. The National Bee-Keepers' Association could do that and bring the price of honey away up. Any legitimate honey-dealer wants to pay the bee-keeper every dollar there is in it; he wants his shipments; he wants to make him happy. I think I have covered the ground now.

Dr. Miller—I want to emphasize that one point. We want the National Association to get so large and to have so much money that they can put a lot of money into advertising. I saw those advertisements and they didn't always appear in the form of advertisements. They made me think, "Why, I haven't been eating near prunes enough." That's what we need in all the prints. We want those dealers to tell the people the importance of eating honey. In regard to this telling what our crops are, you may talk if you please about keeping it quiet. If you are a born bee-keeper and you got a big crop of honey, you want to tell somebody. I can keep quiet and not tell, but I want to tell so badly that it wrenches me terribly!

Mr. Smith—Dr. Miller said he wasn't full of prunes then! In my correspondence with dealers I find they don't always tell the truth. They say honey is a drug on the market; it is worth 11 cents, choice snow-white is worth 12½ cents, and I have had individuals write me right from those places where those dealers are saying that they can't buy a pound of honey under 20 cents, and I have shipped honey in there at 18 cents a pound right under their noses.

Mr. Wheeler—I don't want any reflections on Mr. Muth. I send him lots of honey, and he always did the square thing, and hasn't crowded the price down, either. I find him a better man to deal with than some Chicago fellows.

Mr. Starkey—I am glad I said what I did, although the impression wasn't what I intended. I am glad Mr. Muth

said what he did. He said something good for us. I am a little misunderstood by Mr. Muth in reference to my statement. The question was: Why should we tell the people? It wasn't my idea that we should keep the facts from the people who handle our honey, but the fact that there is an enormous crop I don't think should be spread broadcast. I don't believe in suppressing the truth, on general principles. There are such things, though, as discretion and honesty with silence. The best point and most important thing that has been said has come from Mr. Muth. We should increase the demand for honey. I had about 4,000 pounds of honey, and I could have rushed it into barrels down here, and I could have received probably 5 cents for it; and I got 15 and 12½ cents where a man took as much as a dollar's worth. That has been my price. I have probably got 200 pounds left. I didn't go around to sell it. If we are patient when we have honey we can say, "I will furnish you honey at a certain price," and then wait for them to come and buy that. You can get your price if it's right. I believe we ought to advertise, and the National Association is our only means. The National could spend quite a little money among the newspaper men, even in the Ladies' Home Journal and the Saturday Evening Post. I notice they are advertising a corn syrup. They spent lots of money on that, but no more than the National Bee-Keepers' Association could spend. I called them up by telephone and asked them to send me a sample, and it was clear and nice, and just as sweet and fine, and very much like the syrup produced back in the hills from cane, exactly like it, and it is sweet and has the same flavor. It is 10 cents for a pound and a half package. It will no more take the place of honey than black molasses. We want to advertise, and we want to appoint some one in charge of that who can successfully advertise honey. Let the people know that honey is a good thing, and they will buy it.

Mr. Whitney—I tried to write this thing up a little once within the last year, but we get together in these conventions and we talk until the atmosphere is blue. We talk everywhere, but we don't publish in our local papers at all anything about the good honey would do people to eat it. If we advertised the good uses that honey could be put to, and stopped publishing so much in the bee-papers, we would get our price for our honey.

Mr. Muth—It may be a little off the subject, but to create a demand for honey might be a good point for the National, and I would vote for that. Last summer I conceived an idea of a showcase advertisement in a grocery like you see of Malta Vita and other farinaceous goods. I told them I would also put a swarm of bees in there, a one or three-frame nucleus. To start the goods I would stock the whole showcase with honey. I would get a lady demonstrator in your store, and every lady who comes in and who, you think, would be likely to buy a bottle of honey, you steer her over to the honey stand. I put in \$800 worth of honey. I didn't tell the grocer to buy one dollar's worth. I thought it might pay me after it is all over for what we sold in the store.

We had the finest show you ever saw. One of my traveling men was 100 miles from Cincinnati, and at the hotel at dinner (he was known at the table by the other travelers); he was asked if he had seen that honey display, and they just thought it was the finest thing on earth, and I could have a million dollars in displays in windows today, but it gets tiresome. In two weeks my young lady sold over \$300 worth of honey in that store. I went one point further. I sometimes get a notion to travel. I have got to go, you just can't hold me down. I went East where they have a great department store which covers one block, and it is seven stories high. I said: "Let me see the manager." When we came up to the seventh floor there was an exhibition of everything that they had for sale. I thought, "Here is an opportunity to sell a barrel of honey; stacks of it." I showed them my bottled honey. If you please, there are other fellows in the East. My honey was the best honey in bottles put up. I am proud to say it. It is the truth. I told the manager that I would like to put up a demonstration for a couple of weeks or months. "I would just like to start you off here. I have the finest thing on earth." I sold him nearly \$1,500 worth of bottled honey. Now, the National Bee-Keepers' Association doesn't do a thing like that. We are the dealers that get plugged in the eye every opportunity. Now, the Saturday before Easter, I went to see somebody in Chicago; I had promised to eat Easter Sunday dinner with my friend. I received a telegram which came from about 700 miles from home which read: "Give me the price on a carload of honey; also the price on less than car-lots." This was Saturday night and I knew by Monday morning I would be there. I turned to the telephone and asked my good wife to fix my grip, "instead of going to Chicago I will be gone about ten days." Monday morning I arrived and the fellow said: "I just wrote you the other day." I said, "Yes, but whenever you tell me to give you the price on a carload of honey I don't trust a letter, and I will go all the way across the country to see you." He says, "I am awfully sorry, because you came all the way here for that order, for I have prices that will knock you silly." Just right; I just imagined it. That's just the reason I wouldn't write a letter. To come right down to business, he said he would buy a carload of honey. I don't suppose you folks know I am not a millionaire, when it comes down to a carload of honey. Now, let me tell you while you folks are rated at \$200,000, there are times when I draw a draft on you for \$3,000 and it is returned. I said, "It would suit me much better if you give me an order for 15 barrels, to be delivered the first of the month, and 15 barrels to be delivered the 15th, and it will come right along; but I ask you just the minute your honey comes in the depot you fire the money in." He was surprised to see me so honest. I told him I needed the money. Of course, my bankers will advance more if I ask it, but I preferred to do that way. I knocked out adulterated honey, and he paid me $\frac{3}{4}$ of a cent more for pure honey than he would have paid for adulterated honey. He said, "Are there

any more fellows in Cincinnati like you?" I told him, "Yes." I travel to sell that honey. You folks have more prestige. I would talk about the National Bee-Keepers' Association. Inspire everybody. If you did this you wouldn't be selling your comb honey for 10 and 12 cents, and your extracted for 5 cents. The demand would be greater than the product. It would be true, and the National Bee-Keepers' Association membership—you wouldn't have to advertise it the way you do to get your dollars. They would run for you. That would be the best thing. [Applause.]

Mr. France—I hate to take any time here as it might look, as I am in a position with the National Bee-Keepers' Association, that it would be better to keep still. There are two sides to all these things, and I admit that I have thought very many times of the discussions you had here years ago, and one that rang in my ears a year ago at the National convention, which means united efforts. There was a talk given here a year ago, that the best thing for the National Association to do was to use printers' ink. But a little while ago there was a paper in Sioux City, that published that comb honey was being produced and manufactured without bees. The writer said he knew for he had been in the business for years. He made statements that did thousands of dollars' worth of damage to the United States honey market. The editor refused to put in my reply. Within five days I had, through the Minneapolis Daily Journal, made my reply to it. It was the only one. I think that as soon as the members of the National get together more harmoniously, there is a great opening right along that line of advertising. We have the subject of adulteration to face, but with the vast amount of literature, and those of you who get my report may think I am exaggerating the amount of postage—I have circulated "Bee-keepers' Legal Rights," 4,000 of those have gone out. I also sent out copies of "Bees and Horticulture." We have been saved many conflicting lawsuits by the literature that has gone out, and I have air-castled that we would have another leaflet before 1904 was gone on, "Honey and Its Uses, and Conveniences."

FIRST DAY—EVENING SESSION.

The evening session was called to order by Pres. York, who introduced General Manager France. His subject was:

THE NATIONAL BEE-KEEPERS' ASSOCIATION.

I hardly know how to take up this subject, there is so much to it; it is so broad that my hands have been at the pen trying to answer correspondence and keep the machinery in order as best I could. There are so many sides to it; as I said, I hardly know how to take up the subject, and there are so many parts to it that I have not taken up this year for the lack of means and time. It takes a great deal of time; and, as I said this afternoon, you will find that my Annual Report will seemingly have consumed postage unnecessarily, but it has been in the distribution of literature, pay-

ing postage on that, and the correspondence to keep peace and harmony among our members and fellow men.

While we were on our Western trip attending the National Convention last August, we had opportunity to see—those who were favored by that trip—the effect of coöperation locally. We had had considerable correspondence in that line—articles written in our bee-papers. To see and investigate some of the workings of coöperation in California, Colorado and Utah was a part of my privilege while on that trip. I do hope the day is not far distant when we not only will boast of our numbers and the good we have done, but that the subjects of marketing honey, coöperation, furnishing supplies to the various members, and this other subject which we rather run to at length this afternoon, the subject of marketing honey—creating a demand for our product. There is in Colorado, a honey-producers' association, backed by its members with a guarantee. Any purchaser getting honey of that brand, with the stamp and seal of the Association, is guaranteed that it is pure, and that has created a surprising demand. I thought to myself, Could we have a stamp or a seal upon the honey of the members of the National Association that the world over would know there was no question about, what a door there would be open for us! I hope that day is not far off.

There are conditions that favor this coöperation in California, Colorado, Utah, New York; but when we come to make it National, our interests, climatic conditions, the seasons—we are so scattered that it will take a little time.

There is another point I might mention that was brought up this afternoon, as to telling the amount of honey we have, or advertising it, if you please, what we have received each year. I rather am of the opinion, as a business, we do not boast on what we have. I think it has been tried several times, to get from the subscribers of certain bee-papers a statistical report, that we might know what the honey crop was, and in part it has been a success, but largely a failure, from the fact that when we have a poor crop we won't say anything, and won't tell of it; and when we get a good crop sometimes we are a little—not only anxious to tell it, but some way it enlarges as it goes on, until the product seems to be immense. To overcome that partially, I believe it is possible through the National Association; it could bear the expense. The membership ought to know at least twice during the year what the bee-keepers of the whole United States are doing. We ought to know what States have produced an immense crop and what parts have little or nothing. We ought to know about what the price will be, and instead of—as Mr. Muth and some others have mentioned—throwing an immense amount of honey upon one market, as has been done in Chicago, while other cities have gone without, we ought to have some equalizer, through, perhaps, this National Association, so that we would know better. I have tried over my own State, while inspecting diseased bees, to check sending the surplus of honey on the Chicago market. Other places have been suggested, where

they have found far better prices. It is not always advisable to crowd to the great centers with our product, because it does not stay there, it has to go out. The first question asked by the Reception Committee in California when we got off the train was, "How are the Dakotas, Minnesota, the iron and copper districts of Michigan and Wisconsin for a honey market?" It was rather a stunner to me what California wanted to know anything about that for; but, through coöperation, they had a salesman who was ready to go at a moment's notice to sell honey in car-loads, and he did go immediately after that convention, and he went right up into that country. He was investigating.

There's another side to what this National is doing that I rather regret bringing up, in one sense of the word, that is, there is a tendency, because we are strong in numbers, to impose upon brothers and neighbors with our bees. Some have done so, that could have been avoided, and had they not belonged to the Association they would not have tolerated what they have, and the boast has been made, "Oh, well, my bees have bothered, or if they do bother in your vineyards, as they do in California and some of the fruit districts, you will have to put up with it. I belong to an Association that will soon be 2,000 strong, and you dare not face it." I have had to settle by correspondence and legislation between 30 and 40 lawsuits in the short time I have been in office—a part of a year. It is not a credit to our Association, in one sense, that we have had that number of conflicts. I do say we have not lost a case as yet, although there are two turned against us, but the appeals of these look very favorable to our side; but almost all of these could have been avoided. I wanted to make a brief of each of those in my Annual Report, but I am sorry that, for the lack of time, it could not have been done. One member wrote me and criticised, saying, "Don't, under any conditions, if you make a report of them, say anything in regard to my case. It brings me personally out before the members of the Association, and I am really ashamed of the condition in which I have been, and you, through the Association, have protected me and got me on my feet—just keep my name out of it." So I have refrained from it, treating all as nearly alike as possible, and in various cases I have simply mentioned the locality, and not named the parties, the same as I do in regard to foul brood. There is something about the bee-keepers partially unjust, that is, to retain these troubles after they are corrected.

I am in hopes that we may, not far distant, have something that will have a tendency to help on this subject of marketing honey. The Association can do in many ways what individuals cannot. I remember it wasn't many years ago when this question of reduced freight-rate on shipping of honey was up. All honey went under the same class, whether it was comb or extracted honey. We all had to pay a high rate of freight. There was a committee to go before the railroad people to see if we could not get a reduction. It failed because it was not strong enough. It had been

renewed and failed. Then more of an organization took it up, and got somewhat of a reduction. Through coöperation, in the West, they can ship honey from California to Colorado at much cheaper freight-rate than they could if it were not for their coöperative work. Now there is a possibility ahead that the National may secure something in that line. There is, as I said, a possibility that the Members of the Association can get their supplies, what are necessary, at somewhat of a reduction.

There was a case which possibly it might be well enough to call your attention to. Some years ago the trouble arose, in Canada, and was not settled. It was partially a local affair, but from the fact that we had so many other things on hand our former General Manager was partially compelled at the time being to ignore it, and it passed over until I became General Manager. I found the conditions were these:

There were over there between 20 and 30 members in the National Association, with a lot that wanted to join if they could see there was any advantage to it, and one of their number, who belonged to the Association, had been in Court, and had borne the expense, partially, and their bee-inspector had gone into his own pocket and borne out the rest, rather than see the bee-keeper beaten in a just and honest cause. They applied to me to know if the National Association cared enough about Canadian people to protect its members. I said, "Yes, so long as the Canadian members are a part of us, we think just as much of them on that side as on this, in any suit. We are going to show no partiality."

"That being the case," they replied, "we have had a lawsuit, and there has been a considerable expense, and the members of the Canadian Association feel that you ought to bear a part of it."

I referred the matter to the Board, and got an order to make settlement with the member. The result was they had a convention in a short time, and we had something like 60 additional members. They have had another meeting lately, which I have not had a report from, but I am satisfied there will be a large number more increase from that.

In Texas, a little while before our National Convention in Los Angeles, there was trouble at San Antonio. Two little boys living on a city lot adjoining one of our member's apiaries, took it into their heads to have a little fun, so when they would go by the bee-hives they would either hit the hives with clubs, or would throw stones or something which would jar and interfere with and trouble those bees, and they would then hide and watch the passers-by, and have the fun of it. That thing was tolerated for two weeks, and nobody entered any complaint until one of the boys got an eye swollen shut.

Now, the boy's father was working for the city, and he immediately applied to the mayor to have the bees declared a nuisance and moved out of the city. There was sympathy, of course, and the case came up and the bees were

ordered out. But unfortunately there were a whole lot of other bee-keepers in San Antonio, and when one apiary went, all the others would have to go. We have a representative on our Board of Directors there, so I turned the case over to Mr. Toepperwein to take care of it. Through the suggestions of the members of the Board he has carried that case. It went into Court, and the Judge decided that there is no law in Texas, or in other lands, forbidding the keeping of bees in the city, and we won the case. But we could not have done that if we had not had a man on the ground. And when it came in Court we had present all the bee-keepers from the City of San Antonio, who owned bees in the city—like so many bees that had been dropped in the hive. There were 121 bee-keepers of San Antonio standing there in Court, buzzing mad, ready to fight. It meant something. He could not have won if he had not been a member of the Association.

We want these protections; but let us not aggravate troubles and thus bring them on unnecessarily. To avoid that I sent out over 4,000 copies to the members and to those who have been bringing complaint, of the little leaflets, "What the Courts Say," and the other one, "Bees and Horticulture." It has been a help, and if there is any one page that to me, in all of them, is dearer than any of the others, it is one of the last pages in the leaflet, "To the City Bee-Keeper." If the city bee-keepers—and it includes a large number of our members—would heed the warnings therein it would save us many dollars that we might use to spread out in literature or in some other way that would be an advantage to the members of the Association. For instance, soon after going out of their winter quarters, the city bee-keeper's bees—the charge will be brought by the wholesale next spring of bees soiling the clothes on the wash-line. You know what it means when they are taken out from the cellar, and it is quite an annoyance to the neighbors adjoining these city apiaries. I have suggested remedies—not a cure, but a help for it—that if you know the day that your neighbor is to wash clothes, and your bees are just going out, just delay putting those bees out until after wash-day, so that they may have the balance of that week to fly, and you will avoid a great deal of trouble.

Then, again, at a watering-place. I went a long distance at my own expense, where parties could not let their stock come up and drink at the tank. There were about 100 colonies of bees, and that was their only watering-place. I took a little piece of timber and put it around on the inside of the tank—a piece of 2x4, sawed to fit. It was a round tank. Then put a little waste-pipe and made a mud-hole away from the watering-tank. It is dry around the tank, and the stock come up and drink at their pleasure. The man who brought that complaint is going to have some bees next summer.

There was a brickyard in California. The owner had no bees, and had no interest in bees, but was compelled to stop making brick because his neighbor kept bees, and the bees crossed over the brick to the

alfalfa field, and met the workmen so much that they got stung and had to quit work. The teams would get stung hauling the clay to the mixing. He applied to me to know what to do. "We would be good friends and are now," he said, "but there ought to be something done so that I could do my business without any trouble."

I asked for drawings of the ground, a plat of it. After looking the situation over I brought the two men together in this way: That on account of this you furnish your clay dump-cars, and the bee-keeper shall pay the expense, and transfer that apiary from there to the other side of the brickyard. They will be nearer the pasture, and will not have to cross the brickyard. They are both living happy neighbors ever since. Save trouble and keep out of court.

The growth of the Association has been one that perhaps has not been equaled, and I do not see why it should not continue until our ranks are doubled.

Suggestions have come to me from members, and I confess that I am always glad to receive from any members suggestions as to what they would like to have this Association take up for its betterment. I, as your General Manager, am simply trying to do what is your bidding, and if you have anything that you can suggest for the betterment of the Association, I wish you would give me your aid and help. Through this we know better what to do to meet the requirements of the various members.

The National pin represents an order, not only a group of bee-keepers, but an organization, and this is a day when almost every line of industry is condensed into organization, into union, into trusts. I do not know that we ought to go into a trust, but we can help one another greatly, and this pin means something. Now, then, to explain a point: At the National Convention there were a great many who were not enrolled as members, but wanted pins—wives, daughters, and sons, who had not joined the Association, and they wanted a pin; they wanted to wear it in honor of the Association. The question was, Should they have it? I had my instructions, and, of course, had to abide by them, and this style of a pin on my coat has cost us quite a little, too. The Board instructed me that the family could have as many as they saw fit, but as they cost quite a little it would be better that they pay the cost of the pin, that is, 10 cents each, which includes the postage. I would like to see all members of the families wearing the pin, but, of course, others look at it in a different light.

As to the literature that has been distributed, there is a possibility that some members of the Association have not received all the various kinds of literature that have been sent out. You will do me a favor if at any time there is any of the literature that is a part of the Association that you have not received copies of, or need more of them, if you will let me know it.

I do not know that I have taken hold of any work that has required almost night and day work as this has done the present year. I have sometimes felt as I did with my State

inspection work, that it was too big a task with the other cares that I have, and that I would resign and ask the Board to put in somebody else. There's a great deal to do; there is going to be a great deal more to do; and although the dues have been reduced from a dollar to 50 cents on the larger portion of members, the aggregate is going to keep our treasury sufficient so that it will mean capital behind it, and I hope for success for the National.

N. E. FRANCE.

Mr. Niver—I wish to point out a circumstance that occurred to me with this button. The other day I went to deliver a package of honey to a lady, and she said, "Wait. Are you a member of the union? If you are a union member I will take the honey, but if you are not a member of the union, I will not take the goods." I said, "I am," pointing to my Association button! She paid for the honey, and I have the button.

Mr. Craven—I wish to ask whether there has been any move toward the organizing of the National Bee-Keepers' Association in a commercial way, that is, the pooling of our interests in the honey markets, and whether they have taken into consideration the markets, like the citrus fruit agency of California.

Mr. France—At the National Convention, Prof. Cook gave us a most excellent lecture on that subject, which is possibly an opening wedge, but the Association has not taken up that matter as yet in a way that we are in shape.

A Member—They have not thought of taking it up yet. have they?

Mr. France—Oh, various members and societies have thought of it and suggested it, but we have not as yet gotten into a practically working situation. For instance, the California Honey-Producers' Association, then in Colorado and the various States—they must develop something in their own districts practical to their localities, and finally they will adjust themselves into the National. I do not think it would be wise for the National to undertake it any other way. I would say, however, right on that same line, that if the various associations would refer the matter of marketing their honey to the General Manager of the Association he might make a suggestion. For instance, one locality has an abundance of honey and another has little or none. I have thought that it would be a very good policy if the members of the Association could know, each spring and fall, about what the markets are, where there is a surplus, and inform one another, and avoid, if possible, this overloading some localities and others going short.

A Member—Mr. France, have you thought of collecting reports of the honey-production of the different parts of the country, and issuing it as a National report to the members, or issuing an official statement through the bee-papers?

Mr. France—I wanted to get before the members of the Association early the fact that there were parts of the country expecting a good crop, and a great deal expecting a poor

crop, and I wanted to get a statistical report of it early for the benefit of the Association, and these reports have been straggling in until there are something over 400 not in yet. They come in slowly, but so far as they do come in they will be a statistical report of the members' products in my Annual Report. I must say that I candidly believe that it is going to be one of the great opening doors for the marketing of honey for the members. A great many sell not only their own honey, but have to buy it, and there will be an exchange between members, and it will be a benefit to them. Dealers will know a little better where to look for the honey, and as to our concealing it from the wholesale men, we can't do it.

Mr. Wilcox—Will you not tell us if that same principle can be applied to the purchase of supplies as well as to the sale of honey?

Mr. France—Yes, sir, I think it can, very largely. I will admit that I have felt a little more duty bound to the members of the State Association than to the National, and to those of the State Association who were also members of the National. I succeeded this year getting the 60-pound can at about 18 cents' reduction, per case of two cans. Now, there are two sides to this. We don't want to interfere with the supply business. We want the supplies to be good, and we want the members to patronize the supply dealers; but it can possibly help to bring these things to the producers at a reduction. I don't believe the Association ought to be a supply dealer.

Mr. Wilcox—I wanted to suggest that the Association exists for our benefit, and not for the benefit of the supply dealer, and that whatever we may do for the benefit of the membership, legally, honorably, that properly *should be* done, regardless of the consequences to individuals or certain dealers or classes, but work for the common welfare of all; and I believe the purchase of supplies in large quantities may be worked by the General Manager, perhaps it is even more practical.

Mr. York—But suppose the supply dealer is a member; you would work for him, too, I suppose?

Mr. Wheeler—I have a peculiar point in view, in regard to buying supplies this year. I sent for prices on 15,000 sections to two different parts of the country, to two dealers, and these men did not vary a cent on price. They asked exactly to a cent. What did that mean?

Mr. Abbott—The price ought to be exactly the same for the same kind of goods every place. That is the way we are trying to do with honey; we are trying to make it bring what it is worth all over the country, and that is the importance of having this very thing. Now, Mr. France has about the level-head of any man I ever heard talk, or ever had anything to do with this National Association. I am talking right to his face; but I have a way of talking what I think whether it suits or doesn't suit. My wife says I have too much of that. But let that be as it may. Now, it seems to me that we are getting at something, that we are mapping out some work that is consistent, sensible, that is on the earth, and that is

on the principle of "live and let live," and the principle of general helpfulness. When you are asking all of these questions, and talking about these combinations, you must always remember that the other fellow can do the same thing. Now. I read in an agricultural paper the other day that certain trusts were doing certain things with the farmer, and if they kept on doing that the farmer would do certain things, and then look out! The editor thought that this was an evil, but in order to correct that evil the farmer should do something else that was evil; he should go at him in the same way. Now that was a mistake. If the thing was wrong in the other fellow, it was wrong in the farmer, and it was the wrong principle. Everybody in the world has to live. The man who belongs to a union wears clothes, and the man who doesn't belong ought to wear clothes if he doesn't, and he ought to have an opportunity to get the clothes, and to get them honestly, and fairly, and boldly, and stand up and look every other man in the face, as a man should do, and he should not be disgraced and held up to public ridicule because he is not this or that. He ought to be honored because he is a man, and has within him a living soul, and because there is something more of him than flesh or blood—because of his manhood, and ability—or because of her womanhood, you should apply it to women. Now we don't want to forget this; we are going to remember it. Now I am in St. Joe dealing in supplies, and if you drive me out of keeping supplies I will go to keeping bees and get in competition with you, and give you a rattling time, and then you would want to form a combination and drive me out of the honey-business, and I would go to farming. I would be certain to go to doing something, because I cannot die right away, and I don't want to, and I would have to do something, and I am just as apt to be in competition with you as I am in doing the thing that I am doing now. Now this is the way all this looks to me. I wanted to say this several times, but I did not have a chance to-day.

EXHIBITING HONEY AT FAIRS.

A Member—"Would it not be beneficial to the bee-industry to make honey exhibits at fairs?"

Mr. Hutchinson—It is one form of advertising. We show the public how the bees look, and when they go up to the hives and see the bees storing honey you have a chance to show them the honey and show them where it comes from and show them the glass bottles, and you may get people to eating honey that have never seen it before. It is one form of advertising that is of benefit to us—to bee-keepers at large.

Mr. Niver—At the Pan-American they had a very elaborate show of honey, and immediately after that I went to selling honey at Niagara Falls, and I found that had educated those people there to the desirability of eating extracted honey, and I had a very good time selling it there. Now I have thought if the National would take hold of the St. Louis Fair in a practical way, and work it strong, it would pay

largely. I have thought sometimes of starting a booth there myself, and selling buckwheat cakes and honey.

Mr. France—Right on that line of the Fair at St. Louis—someone, I believe, made a suggestion at Los Angeles, of having some central head to the St. Louis Exposition, and that the various States, through the National Bee-Keepers' Association, could, by some system, make the honey display there a credit to the bee-keeping industry. Some of the States have very liberal appropriations, so that they will have fine exhibits, but I am ashamed to say that my own State has put so much in other exhibits that if there is anything it will have to be individual donations. A good many of the States are going to wait a little too late, and the honey product of this year, which is so fine, will have been disposed of, and what will we have to make the earlier of the display at St. Louis? I am afraid that we are now even a little late, and if the various State societies, through their secretaries, could come in touch with the National Association through correspondence, I believe we can, even yet, systematize this matter to make that exhibit a little more creditable.

Mr. Duby—May I ask if there are any here who have ever made exhibits at fairs, and what the results were?

Mr. Johnson—I exhibited honey once, in Allen County, Kan., about 15 years ago, and I got the first premium. There was no other honey there.

Mr. Abbott—I might say that I have exhibited at fairs, scores of times. At the last one I had \$1,200 worth of stuff, and it all burned up, and I have not made any more exhibits since. I had no insurance on it. But I think that anybody in any community where there is a fair, can go to work in four or five years, by working the matter properly, and get liberal premiums offered—premiums enough to pay for setting up their exhibits, and build up an excellent honey-trade. When I came to St. Joseph there was nothing there in the way of honey exhibits; but I soon had them so that they were paying \$250 premiums. One season I got it—my wife bossed the job. She set the exhibits up and bossed the job, and I furnished the money. But really there is a wonderful possibility to it, especially if you have a city like St. Joseph behind you; and you have no idea, if you have not studied the matter, how it will attract the attention of people, if you put out colonies of bees. The people would come along there, of those worthy 400—they live to eat, and eat to live—and they would say, "Oh, there, see the wax! See the bumblebees!" Or, "What is that? Is that maple syrup, or is it beeswax?" And they would ask you questions for awhile, and say, "Oh, mamma, I wish you would buy a case of that fine honey." And they buy it, maybe people who had not used a case of honey in their lives, and the next year they would have more honey, and the next year the coachman would drive around and say that Mr. So-and-So wanted a case of honey, and he always paid a good, big price. Charge him 5 cents a pound extra for it. And the problem was solved as to where there was a market for some honey.

Now it seems to me that you could do a lot of that in any large city, or even in a small place.

Mr. Whitney—I was simply going to say that I have made a few exhibits at county fairs. I do not know whether it resulted in any particular benefit or not. I never produced any great amount of honey, but always got rid of it.

Mr. Craven—I think Mr. Root can tell us more about exhibits at fairs. He was at the Pan-American, and ought to be able to give us a few hints.

Mr. Root—I do not know that I can give any good information about this business. From the manufacturer's standpoint it is of little value, if I am correct; that is, during my stay at the Pan-American I did not sell enough goods to pay my way, but it was simply in advertising and educating people. I believe that it is a good thing to educate the people at a fair. I will never forget some of the things I heard there. People came in, and one very nice lady explained to another how the bees bored a little hole into the cake of wax, and another little hole next to it, and they bored so many little holes that they had the combs, and the queen-bee came along and laid an egg in each of these little holes! It is very amusing. I explained something to her after that that made her look at it in a different way; but they don't seem to know anything that is the truth of it. They called extractors "ice-cream freezers," and they even called my frame of bees "cockroaches." These things I will always remember. But the thing, it seems to me, that makes this exhibiting profitable is educating the people. I do not see how anybody could buy honey, or would want to eat honey, if he thought it was made by cockroaches or turned out in ice-cream freezers. The people came there and were so interested that they staid two or three hours when they had only one, two or three days at the Pan-American; and I am sure those people are going to buy honey. And then there is another thing: I don't know whether it is of any great practical advantage or not, but that is, a good many school-teachers came up and wanted to learn all they could about the bee-business, and they were going home to teach the children in the public schools these very things. I do not think that it does any harm, and the school-teachers do not have an opportunity to find out about such things. They don't seem to know where to get their information. I think that it is a very good thing; but take it all in all, it's educating the people that makes it advantageous.

Mr. Whitney—I happened to think that, speaking of educating the people, I have had during the past summer three-score of people visiting my bee-yard, and I have taken special pains to give them all the education I could possibly impart in the yard. Even Mr. Baldrige was there. I did not attempt to tell him anything about bee-keeping, but there were plenty of others who were very much interested in bees, and in fact, I know of two or three ladies who are now keeping bees, after visiting my yard; and I think that I imparted some information in regard to the use of extracted honey, and I sold nearly all of mine granulated to that class of people after they had been to the yard and saw what I was doing.

Mr. Wilcox—I thought at first that I would not say anything on this subject, because I am more anxious to hear what others think. I have wanted to know this a long time. I have had this subject on my mind for about 10 years. I was here, as you know, at the Columbian Exposition, in charge of the Wisconsin State honey exhibit, and I might say this at the outset, as Mr. Root has stated, the chief advantages are the educational advantages. It pays in almost any industry to educate people, in bee-keeping especially. It is the one thing that we need most. We are not educating the people by making exhibits, if we simply go and place our exhibit there in proper position, as attractive as we can, and go away and leave it. Thousands of visitors will pass it daily and never know that they have seen anything. Some, perhaps, are so well acquainted that they will know it is honey; others will see it and say it is prettv, or not pretty, and go on. But if there is someone there to answer any question that may be asked concerning the production or use of the honey, then there is information given that does somebody some good, and continues to spread, and as you continue going there from morning to night, day after day, through the season, you have done a great work, and that work tells for years to come. It is certainly a benefit, and in this respect I might say that there is just the same benefit in exhibiting honey at fairs that there is in exhibiting grains, butter and cheese, and vegetables, live stock, or any other commodity; they all do it for a purpose, to show to the people what others have done that they may do; it advertises, and in many ways builds up trade. It promotes commerce and production. It promotes consumption. It is promoting business. If it is properly done, it is profitable; if it is improperly done, it is a waste of means.

Mr. Smith—I wish just to state that I made exhibits at the Illinois State fair several times. Mr. York will remember he was judge at one time when I had an exhibit, and I made the first exhibit of section honey at the Illinois State fair that was ever made. We had sections there which dove-tailed. There were four pieces, and we would stick them together, and the people wanted to know how the bees knew there was a pound of the honey in them! Three years ago I had a miniature mill, representing an old-fashioned water-mill. I had a full sheet of brood-comb; then I had a stream of liquid honey running from back of a curtain, through a wax trough down into the mill, that turned the wheel, and people would come along and see that, and say, "Are the bees making that honey as fast as it comes out of the mill?" They would ask all kinds of questions, and I had an extractor there, and was extracting, and every once in a while we would extract, and they would say, "Look at that man churning honey!" When I would hear that I would inform them, and they would become interested, and stay and ask all kinds of questions. One time there was a gentleman and lady came along, and asked me if the bees were making that honey. It was late in the evening, and I said, "Yes." The man said, "It is dark. I don't see how the bees can make honey in the

dark." I said that I had succeeded in crossing a lightning-bug with bees, and they worked in the dark; and they actually believed it!

Mr. Niver—Mr. Hershisser, at Buffalo, says that he got up an illustrated lecture and gave it at several of the public schools, handling the bees and combs, and taught the children. They are more teachable than the older people; they will remember longer and get things straighter. And he has succeeded in working up a very nice trade in Buffalo. I have thought sometimes it was possible to take a swarm of bees and get them so that they could be shown in the schoolroom for an illustrated lecture, but have never dared try it.

Mr. York—I have often wondered how we got orders for honey from Buffalo. Now I know.

Mr. France—On the same idea, our State Normal School sends out about 400 teachers a year, as teachers in the public schools. While I was student there in the school I felt the need of something of this kind, and there were suggestions offered by the students, until it has been now the eleventh year that the Normal School sets apart a piece of a day for instruction on bee-culture, and they come to my house if I have not time to go to the Normal School. They have been there by the score, and they want to know all there is about the bee-business. This week my little boy, seven years old, just starting in, got up and contradicted the teacher, and said, "I know better." Well, they tried to down him, and if you ever saw an angry boy he was one. When he came home, he said, "Papa, when are you going to have that bee-lecture? The teacher goes on and says so and so about the bee-stinger, and I told her I knew better." The class came out the next day solely to learn what a bee-sting was, and what the bee's mission is when it is depositing that honey, and I explained it to them. On this subject the education is going on, and it is a part of the Wisconsin requirement of the teacher now to teach agriculture in all the schools, and bee-keeping is becoming a branch of that in all the rural districts.

Dr. Miller—I will tell you a little experience I had, and I want to warn you if you go to lecturing in public schools to practice a little at home before you go. Last week the principal of the high school asked me to come and spend an hour in talking to the pupils, and one of the first things I did was to tell them about the bee-sting. I made a picture of it on the board and attempted to tell them how it would work. I had all the barbs running the wrong way, and the thing did not work. If you are going to try it, practice at home a little.

Mr. Moore—It is an old saying that Pres. York and others have said many a time, that if the honey in this country was distributed as it should be, there never would be an overplus. Every one of you, it seems to me, could work up his own home market in some such way as this, so that almost no honey would be shipped to the great centers. Now you have no idea what can be done in the way of interesting people with the commonest things around our apiaries. I will tell you how I worked it here in Chicago. One summer-time, to amuse myself and experiment on the people of Chi-

cago, I thought I would try a new thing for this neighborhood. I got up a box of regular length and height of a Hoffman frame, so that I could set in it two frames, with brood and bees, having perhaps two or three thousand bees; glass on both sides, and a handle going over the whole thing. I filled that with bees, and I spent days and days on the streets of Chicago. Now my experience was most interesting. In my 12 years here I had made acquaintances with policemen and all sorts of people. I said to the policeman at the corner of Adams and La Salle streets, "I will block your street in about five minutes," and he didn't believe it. I had in my arms my little nucleus hive which held probably 10 pounds, and held it up to the policeman so that he could look at the bees. Everybody that came there stopped—there wasn't a soul went by. He began to look uneasy inside of three minutes, and said, "I guess you are right." I moved on down the street. I took the bees into the private office of the Chief of Police, and said, "I want to talk on bees in the center of the city." Some of the policemen and the inspectors knew me; and he said, "That is all right. He does not want to sell anything. He simply wants to exhibit the bees." I went up on the Court House steps—the top step on the Clark street side, and I soon had two or three hundred people there. I don't know where they got their leisure, but nobody seemed to go out of the crowd while I was there. I had the top of the hive screwed on with screw-eyes. I could screw them in and out with my fingers, and I took out four, one at each corner. Then I took the bees right out, and they thought it was something tremendous; and for three or four years after I made my exhibit people would say, "You are the fellow that had those live bees. Why, this fellow handles bees like flies. They go all over him," and so on. I did not take the trouble to explain that they were drawing it mildly, but I dropped that question, and went on to teach whatever came up. I did other things. I would take a frame of honey and a frame of empty comb. After we have extracted our honey how beautiful the comb is, if it is a bright yellow and empty; just the mere wax, and you hold it up to the light, and you can see the cells on the opposite side breaking joints, as I explained to them. Three cells are opposite one cell on this side, is opposite a third of three cells on the other side. And they would say, "Is that so?" If any of our producers all over our great land will take pains to exhibit but the commonest things, to get acquainted by advertising in the journals and by exhibition of these common things, they can sell enough more honey at home, so that the honey question and the price of honey will be settled.

Mr. Meredith—I was going to say, in regard to the advertising of honey, that a park adjoins my place, and I went there with an exhibit of honey, for the purpose of exhibiting and selling it. I put it up in bottles from half a pound to the Mason fruit-jar, but my sales were slow. A candy-maker had no trouble in disposing of his wares in packages for five cents. I bought ten 2½ ounce bottles, got labels, filled them up and sold them for five cents apiece to anybody, more es-

pecially children, and from that form of an advertisement I increased my sales in two days from \$6 to \$34.50. I had signs painted and nailed upon a tree, and I had very curious questions asked in regard to the honey produced, whether I got it out of the trees, etc.; but I took that as a form of advertisement to introduce and sell honey, and found it very satisfactory.

KEEPING BEES ON A FLAT ROOF.

"How many here have ever kept bees on a flat-roof house?"

Pres. York—Mr. Purple here in Chicago used to keep about twenty-five colonies on the roof.

Mr. Muth—No, there is no objection at all. We produce just as much honey in the city as you do in the country.

Mr. Horstmann—Do I understand Mr. Muth to say that you can produce as much honey in the city as in the country? I think if he was in the center of Chicago he would find he was mistaken.

Mr. Muth—In Cincinnati you can take a hop, skip and a jump to go over the city, but that is much smaller, and we have hill-tops where there is lots of sweet clover. In early spring it is yellow, and in a week or two or three it is all white as if a frost came; and we can produce as much honey near those hills as you do out in the country. I believe one man had there 350 pounds of honey to the colony, right in Cincinnati. Of course, here you would not get the same results.

SELLING HONEY BY THE POUND OR CASE.

"Should honey in the comb be sold by the pound or by the case?"

Dr. Miller—Yes.

A Member—Whichever way you can get the most.

Mr. York—I prefer to buy it by the pound.

Mr. Niver—I prefer to sell it by the piece. I think merchants prefer that, and greatly prefer it. My trade was in the anthracite region of Pennsylvania, and I worked it for 10 years there, and found that it was much handier that way, and my customers got so they insisted on buying it that way. There is no figuring for the merchant. He buys for 12 and sells for 15, and he knows just what his profit is. If he buys by the pound it takes a good mathematician to tell—he can't get it exact, and that is not pleasant for the merchant. My idea entirely was to do the best thing for the merchant—pack the honey for him so that he will have as little trouble as possible, and we work for that idea steadily, and that was one point I made: Pack in a case all exactly alike; if it was No. 1, put everything in there that was No. 1: No. 2 do the same, and charge in accordance with its quality. If the merchant had a fancy trade he was willing to pay a fancy price; if he had a cheap trade he took the cheap quality.

A Member—If the merchant buys by the pound, can he figure by the piece?

Mr. Niver—One of the commission men told me he had very great difficulty in selling very fine honey. It weighed over a pound apiece, and the merchants did not want to sell any such honey. They were obliged to sell by the piece, as the competitor did who had lighter-weight honey. The finer honey remained there, while the poorer honey went off rapidly.

Mr. Kannenberg—I think Mr. Niver is in a different light than I am. I would rather sell my honey by the pound, and I know the merchants to whom I sell it would rather buy it by the pound, because they sell it by the piece, and they do not have to figure if the box weighs an ounce or a quarter of an ounce less. They sell it by the section for so much, and don't have to weigh it at all.

Mr. Wilcox—I have had some experience. I wanted some honey very badly this fall. A friend of mine 10 miles away had some to sell. He was one of those men that was just as positive as I was. He would sell by the piece and would not weigh. I would buy by weight, and would not buy unless I could see the pieces, and I could not buy it. They were 24-pound cases. We could agree on the price of the cases if we could know how heavy they were. Could not do that. Now these cases might have weighed 15 pounds, 24 sections. They might have weighed 25 pounds; they might have weighed 20 pounds. I know from years of experience that ordinarily they weigh not less than 22 or more than 23, but some weigh as low as 15 or 16, and some as high as 25, and I could not afford to buy. I don't want to buy honey by the piece unless I can see the pieces. Now if you guarantee them to weigh or to average any certain weight, it is equivalent to weighing them. That is the very point—if you guarantee these cases to go about 22 pounds, and they do not go over 18, it is no sale. If they go 26 pounds you have given them honey for nothing.

Mr. Niver—You have struck a point right there. I sold by sample, and my sample was guaranteed to be the poorest sample that could be picked out of any case that I sold. A No. 1 would be guaranteed nothing poorer than that, and that everything would be as good as that or better. I did it that way. Why did the merchant prefer that? When you sell by the pound the bee-keeper would put his fancy, his No. 1, No. 2, all in one case to make it average a certain amount; but when the merchant tries to sell by the piece how is he going to grade it? He cannot say, "Take your choice," when one is worth double what another is; one weighs 10 ounces and another 16. You are obliged to grade correctly when you sell by the piece, and you are obliged to pack your honey so that there will be practically no choice—the last section in the case you sell as quickly as the first; and that grading I advocated in New York City, and it went into use so that it was quoted in the papers by the case in New York a good many times. A good many dealers quoted it by the case instead of by the pound, and I believe that that suited the merchants much better, because if they had only No. 2 honey they wanted to pay No. 2 prices, and if they wanted fancy honey they paid for that.

Dr. Miller—If he graded them all so that each case was exactly alike, how many grades did that make?

Mr. Niver—In our country it made nine.

Dr. Miller—Did you ever grade any honey that way?

Mr. Niver—Tons and tons of it. The way I came to do that was that in our Association they gave me all the honey to sell for a number of years. In our County Association there were quite a large number who put all their honey in my hands to sell, and I graded the whole of it, and we had three colors for honey, and three grades. We had fancy, No. 1 and No. 2; three colors, white, dark, and mixed, and the mixed was sometimes three colors, and that made the nine grades.

Mr. Clarke—It seems that the thought is to educate the bee-keeper or the merchant to beat the public. I think if all these endeavors were to be put to educating the public to call for what rightfully belongs to them, 16 ounces in their boxes, it would help the bee-keeper a good deal more. Most of you want a light box. He gets paid by the pound. Some of them want 12 or 13 or 14—hardly ever 15 ounces. If the customer comes in he thinks he is getting a pound. They charge 20 cents whether there is a pound of 16 ounces or not.

Mr. Hammersmark—I think if everybody was perfectly honest, we could sell by the piece as well as by the pound; but the trouble is everybody is not honest.

Mr. Starkey—I believe we are all honest with ourselves; that is, we claim for ourselves what is right. I noticed, a short time ago, an enterprising groceryman in my town that took a large quantity of honey, and he advertised it for sale at 18 cents a package. But it happened that these packages, he stated were full weight; and I had noticed a great many people there; and he told me that he had a remarkable sale of this honey, and it was good honey, but the fact that it was full-weight honey had as much or more to do with his selling it than any other thing. There is a great deal of honey that is to be bought at the same price that is a little short, and people are not so stupid as we are sometimes inclined to think. There are certain places where people have never made any inquiries, that have never heard that honey is ever sold any way but by the section, and if they are wrong they don't know it, and if they are satisfied with their price it is all right; but I believe that if we will say, "I can sell you a full-weight section," the bee-keeper's conscience will be easier.

SECOND DAY—FORENOON SESSION.

Mr. York—We are fortunate enough to have with us this morning Rev. McCain, who is in active service. He will offer prayer.

Mr. York—The first number on the program is an address by W. Z. Hutchinson, President of the National Bee-Keepers' Association, entitled,

EXPERIENCES OF A FOUL BROOD INSPECTOR.

Mr. McEvoy, Ontario's most efficient Inspector of Apiaries, says it is easier to manage the bees than it is their owners, and I certainly agree with him. It is all right for an inspector to understand foul brood, to be able to recognize it, know how to treat it, and all that, but unless he possesses tact, and is a good student of human nature, he will labor in vain.

The greatest share of our inspector's troubles come from ignorance on the part of bee-keepers. The man who is largely interested in bees, who reads the journals and books, seldom gives the inspector any trouble. The man who has a few colonies, knows but little of bee-keeping, and cares less, who simply hives swarms and "robs" the bees in the fall, whose colonies, when they die, always perish because of the millers. This is the man who causes the inspector no end of trouble. I visited one such man four times before I succeeded in ridding his apiary of disease. Possibly I might have accomplished the same result with a less number of visits by invoking the assistance of the law, but this is a course I have never yet found advisable to follow, although I may some time be driven to this expedient.

This man had once made considerable money out of his bees, having as many as forty colonies at one time. They had died out and dwindled away. His idea was they had smothered in the winter, or were destroyed by the millers. Four colonies remained alive. One (a swarm that had that year built its own combs) was free from disease; the other three were "on their last legs" with foul brood. On my first visit he was not at home, but I showed the foul brood to his wife. On the evening of that day, after 8 o'clock, I drove 12 miles to see him and talk with him. He had never heard of foul brood, and didn't believe there was any such thing. Carefully and thoroughly I went over the ground with him, several times, read him the law, etc. He finally admitted that there might be such a thing, but he knew that if it was of the nature given it could never be eradicated. I told him that it was too late in the season to treat diseased colonies; besides, his were too far gone for treatment; that they would die before spring, and the honey that they left would be a source of contagion to all of the bees in the neighborhood; that the only thing to do was to destroy the bees and combs. I told him I would be in that neighborhood in two weeks, when I would call again.

He was quite glum and stubborn about it—"was very busy, and didn't think he would have time." I left him some literature and went on. When I came again he was very busy picking peaches and couldn't possibly stop. I offered to do the work myself, but he wanted to be present and help if it "had got to be done."

Next time he had threshers and could not stop. I said to him: "My friend, I have been patient with you, but I can't keep coming here every two weeks. The next time I

come something must be done. Now set a time when you can work with me and I'll come."

He set a day; met me at the station with his carriage, took me home with him, and took care of me. He provided a large kettle or "cooker," and, the next morning, I put on my overalls, and we went at it. The bees had died in about three dozen hives. The combs had stood there and been eaten by the bee-moth larvæ, and mice had made their nests in the hives, and, taken all in all, it was a nasty mess.

The frames were put into the big kettle and boiled; the refuse in the hives burned under the kettle; the hives painted on the inside with kerosene oil and burned out. The three diseased colonies were brimstoned, and the combs burned. We worked hard all day, and my friend was really pleased with the results. He had at last become convinced that there was such a disease as foul brood, and that the only course to get rid of it was the one we were following. He said:

"I must say, 'Well done, good and faithful servant!' I am glad you came, and made me clean things up. Perhaps I can build up again now and make something." He drove me to the station, and parted with every expression of friendship. I think such a course more desirable than "enforcing the law."

At another time I was called into a neighborhood by a young man who was trying to get rid of foul brood, but could not, because there was so much of it scattered around him. I found some three or four small apiaries that were about "played out" with foul brood, and ordered the owners to destroy them. It seems that my predecessor had been in that neighborhood the year before, so the people had heard of foul brood. When I came back in two weeks, not a colony had been destroyed. At the first place where I called the man had gone to the lumber woods to work; the woman was away visiting at a neighbor's, but a boy of 15 was at home, and coolly informed me that "folks of that neighborhood had been 'talking it over,' and had decided that they were not going to have their bees destroyed." I wasted no time on him, but hunted up his mother. She said her husband had not had time; he would be home in two weeks and would surely attend to it. I reminded her that he had made me a similar promise two weeks ago, but had not fulfilled it. I could not keep coming every two weeks. I must see the bees destroyed before going home. She questioned my authority in the matter—said any one might come along and claim to be a bee-inspector. I showed her that no one could gain anything by so doing, and also showed her my commission of appointment, with the big seal of the government, and the signatures of the officers who appointed me. This seemed to satisfy her on that score, but she was very sarcastic. "They would be having *chicken* inspectors yet!" But she would not consent to the destruction of the bees. I told her that while I had the authority to destroy the bees, and that she laid herself

liable to fine or imprisonment by her refusal, yet I preferred to have her consent. At last she said that I could "do as I thought best." I asked her if she would come home and see the work done. She came, but talked very bitterly all the while it was being done.

The next bee-keeper, a neighbor of the woman just mentioned, had said, so it was reported, that "no inspector could burn any of his bees. He would set the dog on him." By the way, he and I had had some pretty stormy arguments upon my previous visit, but I had learned that a man can cool down quite a bit in two weeks. I went into his yard, found him at home, talked with him quietly, showed him how much better it would be to destroy the diseased colonies and thus be rid of the disease; and that I was going to clean it all up in that neighborhood. Finally, *without waiting for his answer*, I said, "You go and get a spade and dig a trench, and I'll light up the smoker and get it going and put in some sulphur, and by the time you get the trench dug, *I'll* have the bees dead." I looked him right square in the eye, and it seemed to me as though it was my will against his, and that he *must yield*. He started after the spade, very slowly—but *he went*. The strain upon my nerves, however, was a little severe.

Perhaps the most obstinate case I ever found was a man with only one colony. I did not think there was any foul brood there, and stopped while going by on my way to the train. The combs were fairly rotten with foul brood. The owner stood back about a rod away in the cornfield while I opened the hive. When I showed him the rotten brood he declared there was just such looking brood in every hive in the country. He offered to bet any amount of money. He would show this brood to "Doc Smith." I told him he was at liberty to show it to all the bee-keepers he could find, but it would make no difference in the end, as the inspector was the one to decide. He declared he would not destroy his bees, nor allow them to be destroyed. I called his attention to the law, how he was laying himself liable. "He didn't care for the law." My time was limited. I had no time to argue, so I drove on. When reaching home I wrote him a long letter, sent him a copy of the law, and a notice either to destroy his bees or have them treated inside of three weeks. I told him I should call again in three weeks, and would shake them off or destroy them, just as he said, if he had not done it. When I called he was away, but he had left word that I might shake off the bees. I shook them and burned the combs. His wife asked if they would not need feeding. I told her they certainly would, and gave her full instructions how to do it. Of course, I know that the bees will not pass the winter alive, but I got *rid of the foul brood*.

I think this should be the motto of every inspector, "*Get rid of the foul brood.*" Every case may call for a different kind of treatment, but, whatever the treatment, let it end with getting rid of foul brood.

Perhaps some of you may think that each man should be treated alike—if you destroy one man's bees you ought to an-

other's. Not so. Here is a man with 100 colonies of bees. There may be a few diseased colonies—slightly diseased. He thoroughly understands the disease and its treatment, and is doing all in his power to rid his apiary of the disease. As fast as he finds a diseased colony he treats it. He has a neighbor half a mile away who has four colonies in box-hives, or in frame hives with the combs built crosswise; the hives are old and rotten, the combs are rotten with foul brood, the bees few in number, and the colonies will all be dead by spring, when the bees from the 100-colony apiary will come over and carry home its diseased honey. The owner may promise to destroy the bees but he does not perform. Can you treat these two cases alike? I say *no*. I burn up the colonies, bees, hives and combs, slick and clean, and so far I have succeeded without recourse to the law.

Unpleasant business? Well, you try it for awhile, and if you do your duty, and "*get rid of foul brood*," you will find fully as many thorns as roses.

The professional bee-keepers give no trouble. They give every possible help and assistance. They look upon the inspector as a friend. He is the man who can *compel* an obstinate neighbor to "clean up"—something that they can't always succeed in doing.

As I said at the outset, ignorance is the one great obstacle. Mr. France has gotten out bulletins that have been scattered far and wide, and I suppose they have been a great aid in his work. I wrote an article describing the disease, giving methods of treatment, together with the law on the subject, accompanied by an engraving showing a comb of brood, badly diseased, and this was published in one of the monthly bulletins of the Dairy and Food Commission, and he had published 2,500 extra copies. I furnished him a list of 2,000 bee-keepers in Michigan, and he sent out copies of the bulletin to this list. He gave me 300 or 400 to use in my travels. When a bee-keeper complains of foul brood in his vicinity I send him a dozen of the bulletins to scatter in his vicinity. By the time I get around to visit him the bulletins have done *more than half of the work*.

Every inspector should have some literature of this kind at his disposal, and bee-keepers should take it upon themselves to see that it gets into the hands of their neighbors.

Perhaps some good might be done by writing short articles on the subject and having them published in farm papers, and in the general newspapers.

W. Z. HUTCHINSON.

Mr. York—Are there any questions you would like to ask Mr. Hutchinson? We had this pretty thoroughly discussed yesterday.

Mr. Abbott—I want to make a motion along that line, that just occurs to me. Mr. Hutchinson suggests sending out these bulletins. It is a thing the National ought to take up, and it seems that right now we might start the influence that would do some work, and I don't see why the National

Association wouldn't give us a bulletin. I move that we request the Governor to request the Secretary of Agriculture to issue a bulletin to be distributed with farmers' bulletins, as others are.

Mr. Moore—I wish to amend this motion materially and see if Mr. Abbott will accept it. I move that our convention do request the National Association to formally ask the Secretary of Agriculture to take this matter up with them with a view of publishing a bulletin such as is mentioned, on foul brood.

Mr. York—Will they be understood to work through the National?

Dr. Miller—It looks to me this way, if we do that, wait for the action of the National, we don't gain anything. Anything we do here would do nothing more than to get the National to act. If two men ask me a thing that will have more effect upon me than if one does it, and if the Governor is asked by this society to do a thing, even if they say no and somebody else asks it, I think we will do more by making it a direct request, and then let the National make the request afterwards.

Mr. Abbott—I had that in view, and I should like to see this motion on its way to Washington tomorrow. I am a fellow who does a thing when I think of it, and while I am in the notion. That was my reason for making it direct. I thought first of requesting Mr. Wilson to do it. He will do it without any request, and he will second it without a request, but we better make the initiative and let Secretary Wilson know we mean business, and I know him well enough to know that you will get a response at once, and Wilson will refer it to Benton. Secretary Wilson is the head, and he will attend to it.

Mr. Wilcox—Mr. Abbott put in what I was going to say, and that is, that Mr. Benton is the man to publish the bulletin, and he is well acquainted with the National Association, and a personal request from them would probably produce the result without any further action.

Mr. Abbott—My motion is to have it go to the Secretary of Agriculture. It will go to Mr. Howard and then to Mr. Benton, but if Mr. Wilson says it has got to go, it goes. If you go to the other end, you commence at the wrong end.

Dr. Miller—I believe we will gain time if the mover of the amendment will think of it right. What do we gain by using our influence second-hand.

Mr. Moore—I withdraw the amendment.

Mr. York—Mr. Abbott, will you please state the motion as it is now?

Mr. Abbott—I move that the Chicago-Northwestern Bee-Keepers' Association request the Secretary of Agriculture to issue a bulletin on foul brood and other bee-diseases as a farmers' bulletin, to be distributed with other farmers' bulletins, and that the secretary be requested, in forwarding the motion to the Secretary of Agriculture, to give him such statements as to the importance of a bulletin of this kind as he may deem necessary.

The motion was carried unanimously.

Mr. York—It might be well for individual members to write the Secretary of Agriculture after it goes in.

Mr. Abbott—I move you that this body ask the General Manager of the National Association to second the effort we are making, to secure a farmers' bulletin on foul brood through Secretary Wilson.

Mr. France—The subject was brought up at the Los Angeles convention and if we hadn't gotten into some other conflicts, there would have been a motion made on behalf of the California convention. I had a talk with Mr. Benton and he said, "You bring up your local associations and the more that come the better." It bears its weight. I expect to be down in New York in January, and they are going to have their individual request for a bulletin, and I think it is not far distant before it will be distributed.

Mr. Smith—As I am chairman of the official board of the State Bee-Keepers' Association, I will also have our Association make the request.

Mr. Muth—We have in Hamilton County, Ohio, a bee-keepers' association, and I have the honor of being on the executive committee, I am glad I am here.

Mr. York—So are we.

Mr. Muth—We will have that in writing and forward it to Mr. Wilson. We will do that.

Mr. Abbott—I will see that the Missouri Association sends in one.

Mr. York—We have the Secretary of the Northern Illinois Association here.

J. W. Johnson—I fully decided in my mind that as quick as I get home I will write the Secretary of Agriculture and request him as we have spoken here.

The motion was put and carried unanimously.

Pres. York—Now, before we go on we will take up the matter of joining the National in a body. We have to do this annually in order to have half of the dues we pay here go to the National. What will you do about it?

Dr. Miller—I move that we renew our action in the matter and join the National in a body.

The motion was seconded and carried.

FORMING LOCAL ASSOCIATIONS.

"Should bee-keepers form local organizations? If so, why? And how?"

Pres. York—I suppose that means in certain districts of the State or county. We have one here in northern Illinois. That would be considered a local association. They have one in Cincinnati.

Mr. Abbott—In answer to that I would say that every kind of people in every kind of industry on earth should be alive with each other and in fraternal help, to help themselves and attempt to help everybody else, and that's one of the best reasons for forming these organizations that I know of. I should say yes. As to what they shall do, that's a matter of

discussion for each local organization. Everybody sees how the matter is. Secretary Wilson will pay more attention to a dozen letters which he is sure to get in regard to this talk, and every State and every county can do the same thing. It isn't for the interest of the bee-keepers just here in Chicago that it will work. It will work for every bee-keeper, even those who never belonged to any association. Let it go out that there is an advantage in union if it is only five people. Take a church of five women and they meet together every week and have a real, real good time, and promote wonderful good in a community, and it is the same way in other industries, and it always helps. It helps me to just leave my store and go over and talk to John Smith who is in the same business. I pretty nearly came all the way from St. Joseph, Mo., to see Mr. York because he is interested along certain lines; simply to get inspiration, suggestions, and help. That lifts me up. That's my idea.

Mr. York—Mr. Abbott says he very nearly came all that way to see me. I don't believe it would pay him, but he says he might do that. It would pay sometimes probably for us to get together and see persons. I have had gentlemen come to see me about certain matters, and it seemed to do them good, and I know it was good for me just to meet them.

Mr. Johnson—I am satisfied that local organization is a good thing, and especially in selling honey, but I would like somebody to tell us how we are going to get a local organization.

Mr. Whitney—I think we will agree that an organization is a good thing, but it is sometimes difficult to know how we are going to get them together. At our place I have taken a little pains to try to get bee-keepers together at Lake Geneva, and I have written half a dozen letters and I don't get a response from a single individual. We are going to try it, though, and see if we cannot get an organization. I think if we had an organization at Lake Geneva, individuals wouldn't be rushing their honey to the grocers at 10 cents a pound as they did, and lose money by it, too. I tell you, an organization is what every county that has a number of individuals engaged in the same business ought to have.

Dr. Miller—I very strongly suspect that if a man were obliged to answer that perhaps he would answer it all right, and he might say—well, I don't know all about it, and I would like to call on Mr. J. E. Johnson to tell us just how he would go to work to get up an organization in his neighborhood.

Mr. Johnson—I have been trying to organize an association of our county, and of course, I would like to take in other counties. I have talked with a great many, but I have never talked with any but what say it is a good thing, just the thing exactly. I have started out a little on that line, and that is to write all the bee-keepers I know of in the county, and put an advertisement in the daily paper to get the address of all I don't know, and then try to have a meeting; then organize, and your other meetings would depend upon the success of that one.

Mr. Hutchinson—I started an organization in north-western Michigan. I got a notice in all the bee-papers, stating that on such a date a meeting for the purpose of organizing a local bee-keepers' association would be held. I put a notice in all the daily and weekly papers, and in adjoining counties, and wrote the editors and said I would thank them to give a notice of the time. I wrote to some of the dailies in Detroit of our attempt to organize, and wrote postal cards to any bee-keeper I knew in that county and adjoining counties, and asked them personally to come and organize an association, and when the time came there were about 30 bee-keepers present, and we organized. We have an organization there now.

Mr. York—I want to say that you won't find the papers charging you anything for the notice, and when you get together you will find a date to suit the majority.

Mr. Niver—We have a bee-keepers' association. Two men started that. Mr. Coggsall and Mr. Morton. They announced a bee-keepers' picnic in June and advertised it through the papers, and the bee-keepers from around there as far as 25 miles all came to the basket picnic, and they organized that way. It was a large gathering, and it wasn't just bee-keepers, the whole public was invited and it has been for 15 years a very prosperous association.

Mr. York—I don't think it is necessary to organize a county association. There might not be enough in one county. Perhaps one county is all right; Hamilton County, Ohio, and Cook County, Ill., would be, but we thought best to spread out and get more. I don't think you can have more than one really good bee-keepers' association in a State.

Mr. Abbott—Another word on the how. Now if there should happen to be only three people come, then there ought to be in that crowd that came three people that would make the officers. If these gentlemen would go over and say to Jones, "Will you act as president?" and to Smith, "Will you act as secretary?" and another, "You act as another officer." Well, now, you meet at my house, and meet whether anybody else comes or not. Elect Jones, Smith, etc. I will give you a little inside talk. Every reporter is aching for an item as much as you are for a free advertisement. You go over to the newspaper reporter and tell the longest story you can. Two people can have an enthusiastic meeting if you want to. Tell him the names of the officers, and get the names in all the local papers you can, and also have them state that you had an enthusiastic meeting of bee-keepers, and you will have another enthusiastic meeting with a large crowd. You will see the next time there will be somebody there to make a convention.

Mr. Whitney—Mr. Abbott has stated just what I intended to say. They say some people's wit comes too late. In Ohio I went to Mr. Botsworth, and said, "Will you be president of the bee-keepers' association?" He said, "Yes." And I found somebody else that would be secretary, and somebody else that would be some other officer, and we got together and organized. I drew up the constitution and by-laws and

there was just enough to make the officers, and it was advertised that at a certain time we would meet at some prominent bee-keeper's place. It was right in the midst of quite a number of bee-keepers. Instead of three members we had 50.

Mr. France—There was a bee-keepers' organization commenced in Grant County, Wis., by E. France and his son, and that's all who were there. We advertised it through the local papers, and those right in our own county didn't even come. In two years we had over sixty. They organized.

Mr. York—I have heard of a father and son having an enthusiastic time, but it was in the woodshed. That's not the case here, perhaps.

LONG-TONGUED BEES AND THEIR WORK.

"Do the so-called long-tongued bees work to much extent on red clover?"

Dr. Miller—There is no question but that the hive-bee does sometimes work upon red clover. There is no question in my mind, and no question in your mind, that the red clover blossom is too deep for most bees to work upon, and there is no question in my mind but what a bee with an unusually long tongue has a better chance on those blossoms than one with a short tongue, so I believe that they do work to a considerable extent on it, and I believe that some of our bees, where we don't expect it, work on it. The question that is really down at the bottom of that is: Is it worth while for us to work for long-tongued bees, or pay any attention to that? Admitting all the value, I don't believe that it is worth while for me to pay any attention to which of my colonies have long tongues or short tongues. The thing I look for is which colony gives me the best crop of honey. When I do that, I am very likely getting the long tongues. I want the ones that get the honey. I think very likely you will get them when you do breed from your best colonies. I don't believe we need to talk much about it, but to breed from the colonies that will give us the most honey. Now allow me to defer from that point, and say that I believe that if you work—that if any man here who is six miles from me—works in his own apiary trying to improve his stock by breeding from his bees that give him the most honey he is helping me six miles away, and every one of us. You may say it is very small; but it is that much. It isn't that one man should work to improve his stock, but we all should. If you keep good stock and my bees meet your drones—although if you are six miles away that won't happen—but still, the thing is extending, and one of the things we need to do is to get bee-keepers at large to understand it is an important thing that each one should breed from his best stock.

Mr. Longsdon—My experience has been that my best yields has nearly always been from the hybrid bee. That would encourage breeding from mixed races of bees. I had some long-tongued bees and they weren't satisfactory to me. They are nice to handle, and I like them first-rate, and the

red clover don't seem to worry them at all, but my best yield has nearly always been from colonies that have a little mixture from the black bee. I don't know whether to encourage breeding from a mixture or not.

Mr. Longsdon—I would like to hear from Mr. Muth on the long-tongued-bee business.

Mr. York—Do you want long-tongued bees, Mr. Muth?

Mr. Muth—My friend in the rear is afraid that I may stir up a hornets' nest. May I hear the question again?

Mr. York—Do the so-called long-tongued bees work to much extent on red clover?

Mr. Muth—I believe I spoke to a gentleman this morning at the breakfast table, who said he had had bees for many years, and I plead guilty of advertising the long-tongued red clover queens, and I will say for the others that I believe they are all quiet, because we *all* have red-clover workers, but they want the poor common workers to understand that they have bees with longer tongues. I believe they are stuffing something down us that is not so. I believe in calling things facts. When we have a customer come in and ask whether our bees' tongues are longer than any others, I will quote them just like this gentleman here. I believe you have hybrid bees, to tell you the truth, that produce as much honey as the bees from \$2.50 queens.

Mr. York—Whose?

Mr. Muth—Those that are advertised. We sometimes pay \$10 and \$15. I paid \$10 for one queen some three or four years ago. I wouldn't part with it for anything. It might be because I paid \$10 for her, but there are others that are very fine, but long-tongued bees are one of the things—I believe when a man tells you his bees have longer tongues than anybody else's, I think that is a little bit too much. I don't believe it all. I have Carniolans, hybrids and blacks that I see produce just as much honey.

Rev. McCain—May I not ask if these tongues have not been measured? I have been reading some of the bee-books in the last two years, and I have seen some party giving the length. I must plead ignorance, but the book says they have been measured, and they gave a picture of the relative length of these tongues. I wanted to see if they actually measured these tongues with a micrometer.

Mr. York—I notice that Mr. McCain is asking us a question, and giving us a chance to answer. Most preachers don't give us a chance to answer!

Mr. Smith—If it is a good idea to breed for long tongues, why wouldn't it be a good idea to breed for short stingers? The argument holds just as good.

Mr. Abbott—Things are not always what they seem. That's the gist of it.

Mr. York—A stinger always is!

Mr. Moore—I believe Mr. Abbott is wrong on this idea of breeding out the stinging propensity. All right, do that if you please, and have all the neighbors' boys and town boys eat your honey. It is my idea not to breed the stingers out, but teach your bees to respect the members of the family

and jab their stingers into the neighbors' boys and all who come to rob.

Mr. Muth—I measured lots of bees' tongues with a micrometer. You can take 10 bees out of a hive and there will not be two tongues alike. We have them all the way from 13, 17, to 20 one-hundredths, just according to how hard you press on their heads. You can make them any length you like. I have been in families where the husband and wife had a good many children, and there was a great big, long-armed fellow, the laziest man in the family; and there was a little bit of a runt, and a cripple may be, and he did all the work. So it is not always the long-tongued bee that does the most work. That's my *candid* opinion about the long-tongued bees. I am guilty of advertising long-tongued bees, because if I didn't do that I couldn't sell any queens!

Mr. York—That's his *candid* opinion; that's *granulated*, I suppose?

Dr. Miller—The tongues have been measured, and it is a fact, I have no doubt, as Mr. Muth says, that you can stretch, and you can measure, and you can do this unfairly, and there are scientific men, and they can be measured fairly, and there is a difference. As he suggests, there will be a difference in one hive. They will not be all exactly the same. Just as you see in a family there will be differences. You will find this, that one colony in the yard may have longer tongues than any other colony in the yard. Go back to what I said awhile ago, the nectar in the corolla of the clover blossom is difficult to reach on account of the shortness of the tongue, and as the longest pole brings the persimmons, so the longest tongue reaches the nectar, and if there was nothing else to judge by I would believe a good deal of that. and doing as some of the French do, and taking that colony which had the longest average length, and take that as the best colony. I believe it would be a good thing to do that, although I don't think it of much value, because we can do something better; we can measure the honey or crop we get. Those that give me the crop of honey are the ones I want. It might be of value to have the longest-tongued if we had nothing better to do than to measure the tongues, and taking the longest. We can do better than that. We can measure our crop of honey.

Mr. Moore—I have been waiting a number of years for this minute—to get Dr. Miller on the run. I have had my own suspicions. I spent \$15 for a queen. There is Dr. Miller with all his 40 years' experience among the bees and he has never, as far as I know, said one word in print about long-tongued bees getting honey from red clover. I want to ask you a question: Do you, Dr. Miller, know personally of long-tongued bees gathering from red clover to any extent?

Dr. Miller—Mr. Moore doesn't read carefully all I write. He doesn't think it worth reading, or he would know that I have said in print what I have said here. I say, I don't know whether the long-tongued bees did more than any other. I do know that a long-tongued bee will do better

than the short-tongued bee, and I don't need to see the colony do the work. Some things we can tell from common-sense without seeing. I know that I can from here reach that watch on the table.

Mr. York—But I don't want you to!

Dr. Miller—And I know that a man with an arm two feet longer can reach it easier. Have I seen him do it? I don't need to. I know he could do it.

Mr. Moore—It is kind of mean, but I want to crowd you squarely into a corner. You have long experience and you say to this convention that you do or do not know of a red clover field, whether your long-tongued bees did gather from that field or not?

Dr. Miller—I don't think that any of my bees have ever gotten a large amount of honey from red clover. They don't need to, the red and white clover being in blossom about the same time. I have seen them working on red clover, and have seen them without going more than two rods from my door, so I do know that they sometimes work on it, and at other times I have gone in a red clover field and I couldn't find a single bee. I don't think I have ever gotten very much honey from red clover, but I believe that I will get more if I have bees that can reach the nectar. In other words, I could get more honey, if they would try to get it, with long-tongued bees than with short-tongued. Now because some may have gone too far in this business don't settle down that there is no value in long-tongued bees. There is very decided, and positive, and great value in long tongues, and I believe the long tongue will go with other qualities. If there is any truth in the doctrine of scientists about these organs, then the effort to get that honey will lengthen that tongue, and the bee that is good in other respects will have that tongue. Don't understand me as under-rating because somebody has been advertising too much on it. There is value in the long-tongued bee. But we don't need that sort of a machine to measure the tongue, we can measure the crop, which is worth more.

Mr. Muth—We want bees with long tongues, but we want to know whether there is any truth in it. That is what I am trying to answer, and candidly. The act of Dr. Miller trying to stretch his arm out to reach that watch is something different from the corolla of red clover. Suppose, we will say, the nectar in the corolla it is not solid like the watch. The side walls of that little flower attract the moisture and a bee with a short tongue will not need to reach the nectar. It can catch ahold of the side-wall, and just sip up that nectar without touching it.

Dr. Miller—Do you tell us that a bee with a short tongue will reach all the nectar in the clover?

Mr. Muth—No; nearly all.

Dr. Miller—Do they do it?

Mr. Muth—I believe they do.

Dr. Miller—They don't in my locality!

Mr. Muth—They can suck it off on the side just like when you go to eat gravy. Let a piece of soft bread lie in

the gravy; and it will take it all up; and that's the same way that the bee gets the nectar from the flower.

Mr. Abbott—The test of all teaches that bees do work on red clover sometimes. They do in Missouri, and I have invariably noticed that when we have a flow from red clover every colony in the apiary was working on the red clover. Something like four or five times have we had a good flow. I had Italians and hybrids and Carniolans. I was experimenting, and time after time when I found the bees in the field working I went to the hives to see if any special colony was carrying in pollen or honey, and I found them all working just the same, and when they were not all working there were not any working. The Italians sometimes get out earlier, and the general condition through the apiary was the same in every hive. It wasn't the long tongues. There was something else besides long tongues.

RECOGNITION OF THE SECRETARY'S SERVICES.

Mr. Horstmann—Before we start on more questions, there is one thing I would like to bring up, and I think it should be considered at this time. We have one member in this organization who has been very faithful to the organization, and we have never done anything to pay him for any trouble and work he has had, and I know he has had a great deal. I am speaking of our secretary. He has served ever since we organized. He has done a great many hours of extra work that some of us perhaps never think of, and I think this association can very well afford to pay him a little for his work. I move that we give him \$25 for his past year's work.

Dr. Miller—Past year's work? It is for the past five years' work. I wouldn't say for the past year's work.

Mr. Horstmann—I wouldn't make an attempt to give him anything for the other years. Just make it for the past year. We will let the other years go. He has never said anything about it in any way. He would be satisfied if he didn't get anything, but I feel as though we should do something for him, for "The laborer is worthy of his hire," and I don't feel satisfied to have him work for nothing. I move that we pay him \$25 for the past year.

Mr. York—I have been in the Association from the beginning, and I know that Mr. Moore has done the work for five years, and freely, gladly and willingly, and he has done everything to make this Association a success. I think we all have enjoyed the results of the labors he has given us. So much depends on the secretary. The amount of correspondence and mailing out of circulars, especially in the past year in connection with the foul brood law, has been a good deal. I am very glad this motion has been made.

The motion was put and carried unanimously.

CAUSE OF PICKLED BROOD.

"What is the cause of pickled brood?"

Pres. York—Mr. France ought to be able to help us out on that.

Mr. France—The cause of pickled brood? In short, I don't know, but certain conditions seem to produce it so that with a series of experience on those lines we can draw some conclusions as to what that might be. A shortage of proper food for the larval bee and a lack of proper temperature are the two main causes. Now to upset that, in one of the counties on the lake shore up here where every colony had pickled brood, it was as serious as if it had been foul brood. The colonies were reduced down badly. I fed every other colony, strengthened them and warmed the hives up by outside wrappings, and it disappeared in these and not in the others. The next year, in the same yard and in the same locality, I asked them, between the time of fruit-blossom and clover—there was about ten days' lapse of no honey-flow—that each day these bees be fed a little, so that they never knew the lapse between dandelion and clover bloom. It kept up good, and they had no pickled brood, but the others that were not treated did have. It was there at the time when we got the honey-flow. You must go back to the time when it began. Pickled brood, I don't believe, will ever lead to foul brood. Pickled brood will dry down in the cell and it will be lost. The bees will probably take care of it themselves.

Mr. Abbott—Where did that name "pickled brood" come from? They make pickles in Missouri with vinegar and salt. Why is it called pickled brood?

Mr. France—Dr. Howard gave it that name, as near as I know.

Mr. Abbott—Did he assign any reason?

Mr. France—No, there was somewhat of a sourness there, but we get that also in black brood.

Dr. Miller—There wasn't any black brood then, so that didn't count in the case, but there was the appearance of sourness, or being pickled.

Mr. Abbott—That's so. Dr. Miller would make an educator.

Pres. York—If Mr. Abbott would read the American Bee Journal he would find out all about it!

Dr. Miller—He has.

Pres. York—Dr. Howard examined a certain sample of diseased brood, then wrote an article about it, and it was published in the American Bee Journal. Afterwards he had it printed to insert in his book on "Foul Brood." It was entitled "Pickled Brood and its Causes." Dr. Howard named the new disease "pickled brood."

Mr. Moore—I want to give Mr. France a chance to take something back. He was quoted in a late number of the American Bee Journal, in a foul brood article, I believe, as saying that pickled or foul brood may begin from a lack of prosperity in the colony, chilling, starvation, etc.

Mr. France—That foul brood might be produced by that?

Mr. Moore—Yes, sir.

Mr. France—If I said so I doubt whether I was understood by the reporter.

Mr. Johnson—I have the article here of the report and I

wondered at it myself. It reads: "There may be lots of solid honey in the hive, but the brood may be starved or chilled, and these conditions may produce or cause the foul brood, or under these conditions pickled brood."

Mr. France—I remember saying that the conditions that would be produced by a larva in that condition would be a proper medium, and would advance the growth probably of foul brood.

Pres. York—That's it. It would develop there, but of course not unless the germs are there first.

Dr. Miller—I think Mr. France has very distinctly said that foul brood would not be started in any case without the germs.

Mr. Moore—Will Mr. France tell the convention how foul brood does start, how near to the source, or what is the source, if he has found it, or the original foul brood or any case of foul brood?

Mr. France—I have got after that as close as I can. I have gone back and read, two weeks ago, a German book on foul brood that is 123 years old. I confess I don't know what would originate foul brood. I can find where it was first imported to America, and from Canada to the United States, and from Italy to the United States, but what will originate a case of it I don't know.

A Member—It is like the smallpox. We know we have it, but we don't know where it originates.

Mr. France—Yes, you might say it is like smallpox. We know where probable conditions produce it. There is some in Canada where we can't account for it. One year an apiary was overflowed by the St. Lawrence River, and that drowned the brood; at least it appeared there, and it had never been in that place before.

Mr. Abbott—Might they not just as well ask you the question if you knew where any of the microscopic germs came from in the universe?

Dr. Miller—What good would it do if you did know?

Mr. France—In most of the cases, through his management, the bee-keeper has gotten it into his yard.

MOVING BEES IN HIVES WITH LOOSE FRAMES.

"What is the best method of preparing loose frames for moving?"

Mr. Abbott—Fasten them.

Pres. York—By what method?

Mr. Abbott—The easiest method for me is to take a hammer and some nails. I have moved many and shipped them half way across the continent.

Pres. York—That is the Missouri method.

Mr. Wilcox—There are a great many methods of fixing them. Let them alone six months before the time and they will fasten themselves by brace-combs, and if moved a short distance they won't require any additional fastening. In other cases I have found it very convenient to use end-bars of the brood-frames, Just as we have the material for making brood-

frames, tack the ends and slip them down, and it just fits the space. They are all wedged up fast together, and when you are ready to open the hives just pull them out. It is easier done, and cheaper, and it is perfectly safe.

SHIPPING BEES BY LOCAL FREIGHT.

Mr. Abbott—While this question is up I want to touch on a thing right in that line. You know, Mr. York, that you and I went before the classification committee and got them to ship bees as local freight. I want to know if any of the bee-keepers have been taking advantage of that? Is it generally known? I went to ship six colonies into Central Kansas and the agent said, "You can't ship these less than carload lots." I said, "Yes, I can." He sent me to the foreman and he said: "You can't ship bees that way. You ought to know better than that." I said, "I ought to know better, and I think you ought to, but you don't seem to know. I was there when they admitted them into the classification, and I am right sure it has not been taken out." He said, "You can't ship them that way; you will have to take them back and ship by express." I insisted upon his looking it up, which he did, and he says, "Why, it is there." I said: "You might have known it, or I wouldn't have told you." He hadn't even noticed that. There hadn't been enough going on there. I wonder if the bee-keepers generally know that they can do that? They didn't down there. Those bees were in St. Joe hives, and all he did was to nail the cover on, and they went to Central Kansas perfectly safe. I think it cost the purchaser about \$2 for freight, and the express charges would have been about \$10.00. So you can see what Mr. York did!

Pres. York—How many have taken advantage of shipping bees by local freight?

Mr. Baldridge—Has it been printed, the classification that they could ship by freight? Has it been printed in the American Bee Journal?

Mr. Abbott—I think Mr. York printed it. The manufacturers got us to go. I wrote the G. B. Lewis Company, and I think it was printed in the American Bee Journal.

Mr. Hutchinson—Over how wide a scope of country does this classification extend?

Mr. Abbott—All over.

Mr. Hutchinson—Does that take in Michigan?

Mr. Abbott—Nothing east of Chicago.

Mr. Whitney—I shipped 22 colonies from Ohio to Illinois by the hundredweight. I didn't have a carload. I had about 2,500 pounds, and they occupied the whole car on the Baltimore & Ohio from Shelby County, Ohio, to Kankakee. I paid regular rates by the hundred. They didn't ask me to take a car.

Mr. Niver—In New Jersey, Delaware, New York, and Pennsylvania, all through there, they don't ask any questions. I have shipped at different times different quantities,

and never a carload. There were no questions asked; they always went.

Mr. Abbott—The rate is double first-class.

MOVING BEES IN WINTER.

"Can bees be moved in winter successfully?"

Dr. Miller—Yes.

Mr. Thompson—The question came up last winter about a carload, and I am not quite certain but what some were being brought into Wisconsin in the winter, and the results were to be watched, and I would like to know if there is anything known of it now?

Mr. France—I think the party who came from Canada to Wisconsin moved in the winter, in December, when the thermometer was below zero, and he had a loss of two combs so far as the shipment of bees was concerned, but there were other things broken. He came to this country, and they held his bees for eight days in transit, and while on the way he caught a serious cold, and could get only as far as Chicago. The bees were brought on to Wisconsin, unloaded, covered up with straw and hay, and he hurried on here and by the time he got back his 200 colonies of bees had gone down to 50. I had an opportunity to present the man with 60 colonies of bees by just going and getting them this season.

Mr. Wheeler—How was that?

Mr. France—He came from Ontario, Canada. The bees died from exposure after they were piled up. I knew of two yards, one of 60 and another one of 11, that were diseased, and the owners were disposed to burn up everything, and I had an opportunity to give this man the bees. I took them home, and out of the diseased hives, and put them in his healthy hives. The diseased material was left in the other yard.

Mr. Thompson—Would it be possible to move them? Under what conditions should the remainder of the winter be spent, and are they in any condition in the spring?

Mr. Wilcox—Do you mean in good condition instead of any condition?

Mr. Thompson—I mean in condition to work.

Mr. Abbott—A customer asked me about moving his bees. He was building a new house, and he asked me what I thought would be the best thing for him to do with his bees. I told him if they were my bees I would wait until it snowed, and I should put them on a sled quietly and set them off just as quiet, doing it myself, and then let them alone. I was just wondering if I gave him good advice.

Mr. Whitney—My first bees were two colonies in Ohio. I bought them and moved them five miles in zero weather on a sled. They came out all right in the spring. Of course, I handled them carefully.

Mr. Thompson—I was told by a prominent Wisconsin bee-keeper that he would move bees at any time during the winter, and put them in a cellar where the thermometer wasn't lower than 60 for ten days or two weeks, and he had

no fear but what they would come out all right; that they would winter safely.

Mr. Longsdon—Mr. Thompson has told us how we may move bees without harm. Put them in a cellar or warm place until they get quiet and cluster. It is no trouble. But to rouse them up in cold weather you are simply destroying lots of them unnecessarily. Give them a warm place to re-cluster in.

Mr. Wheeler—Some 15 years ago I moved 24 colonies to Iowa on a freight train with a lot of stock and stuff. After I got there, they were unpacked and I piled them up and covered them with chaff and straw and let them stand there nearly a month before having a flight, and every colony lived and was strong and in good condition, and I was quite surprised myself that they came through. They weren't put in a cellar. The atmosphere was zero.

Mr. Hintz—I had a little experience in that thing that I will relate the results of next fall. I moved a lot yesterday on a common hay-rack, 14 colonies, and five in a little spring wagon, and they got roused up on the gravel road. They were three miles from home and I didn't have time to take off the stories. They got roused up, but after awhile they settled down, and I think they will winter just as well as any. I moved some before in winter weather. They had a good lot of honey, and a good clustering place. They didn't get separated in the comb, but only pretty well stirred up, and there was a clustering place or super up above where they clustered between. There is no danger, and especially three or four weeks after, if they can have a good flight. I will report next fall at our meeting. I have 37 colonies to move, and every hive with honey. Both stories are full.

Mr. Wilcox—It would be well to offer a word of caution. One fall, the harvest over, the hives were turned over in the snow before carrying them into the cellar for winter, and they remained in that condition but a few days. How long I do not know, but when I went to carry them into the cellar I found the bees were all spotting their combs. I straightened them up and put them into hives as well as I could, with plenty of leaves, and carried them immediately into the cellar with others, and they were kept at a good and proper temperature all winter, and in the spring they were all dead, every one, while the other bees wintered well. This tends to show that those colonies were injured by being turned wrong side up into the snow but a few days before going into the cellar.

Mr. Hintz—Did they have fall or spring honey? If they have good fall honey it won't hurt them.

Mr. Wilcox—If you know that, I will take your word for it. I don't know it. I have always believed fall honey was as good as spring honey to winter bees. As to what they did have, they had the honey they reserved for themselves, and they got it themselves, whatever that may have been.

Mr. Wheeler—I am not anxious to talk, but I have

had an experience. I have had mine hauled home and put in the cellar without a flight or anything, and I have had my bees in my home yard carried into another cellar, and I watched it very closely for I have heard a great deal about that, and I have found no difference in the way the bees winter. Those that were hauled home and put in at once and not given a flight wintered just as well as those that were set right in the yard.

Mr. Thompson—Did you ever take them out in the same manner from the out yard?

Mr. Wheeler—No, sir; I didn't do that.

PLACE OF THE NEXT NATIONAL MEETING.

Pres. York—How many prefer to have the next National Bee-keepers' Convention at St. Louis?

Dr. Miller—That question I see asked in the American Bee Journal by Pres. Harris.

After a long discussion, the result was as follows: St. Louis, 18; San Antonio, none; Cincinnati, 9; Salt Lake City, none; and Boston, 2.

SECOND DAY—AFTERNOON SESSION.

QUEEN-REARING—TRANSFERRING LARVÆ.

"What is the best method of transferring larvæ from worker-cells into queen-cells, and is royal jelly a necessity?

Dr. Miller—Royal jelly is not a necessity under the right way of manipulating, but I don't know what the best way of transferring larvæ is. The way that does for me is to take a piece of grass, timothy stick, something of that kind, and cut it into the form of a toothpick and dip under the larva in the worker-cell and put it in the queen-cell. That's all there is of that part of it. I don't know but what the queen-breeders use something better, but the grass is always at hand and I use that.

Mr. Starkey—I don't know what is best, but if I don't happen to have a spoon made for the purpose I take my knife and split off splinters of soft wood, and cut it with a toothpick point, and run through my fingers with the thumb-nail on the back, and by that pressure I make it cup. It is pliable, and when I push that down into the cell it will spring under the larva and dip up, and it will very easily slide off when I put it in the cup. The front part of the wood is cut flat and the back I cut three-cornered—a flat triangle, and by slipping it through my thumb it is made pliable.

Mr. Wheeler—I prefer to let the bees do it.

Mr. Duby—Is royal jelly a necessity? Some say it is not, some say it is. There are perhaps some parties here who have answers for this. Perhaps Mr. Stanley uses royal jelly when he transfers.

Mr. Stanley—Well, I don't know. I think it is. It is a great start anywhere. They accept the cells better with it, and there is nothing better than a toothpick to transfer the larva, or a quill will answer the purpose.

Dr. Miller—Can you get along without the royal jelly at all?

Mr. Stanley—Yes, sir; it can't be depended on, though. Some colonies might do very well, and others wouldn't. You might get along without it by putting the cells in first and then supplying them with the larvæ afterwards. By putting the cups in the queenless colony for some time they accept them better that way without the jelly.

BOTTOM STARTERS IN SECTIONS.

"Are bottom starters in sections necessary or desirable?"

Pres. York—I think they use them in Marengo. Now, Dr. Miller can't say "I don't know" to that.

Mr. Meredith—In two apiaries that contained over 50 colonies, each with and without the bottom starters, 200 sections were put on the market cased up, and I found that the ones having both top and bottom starters was honey that was more salable than that produced where they had only the top starter. I am very particular on account of the quality, and if the starters were not very well toward the bottom, many times the drone-comb would be there, and customers object to it.

Mr. Longsdon—Will Mr. Meredith please tell us a little bit about the heft and form of the comb-honey package that sells the best, that is, the most in demand, and that we can do the best with, if he will?

Pres. York—We will have that after the present question.

Dr. Miller—So far as I know, I was the first one who began the bottom-starter business, and I am at it yet. Pretty often you find me five years afterwards throwing away the things I have done before. There is this about a section being filled: It is very much as Mr. Meredith has stated. You are sure of having the sections built down to the bottom, and under certain circumstances without it you are pretty sure that it will not be built down to the bottom, and it will have a passage-way under. One of the things that results from the bottom starter, you will avoid what is sometimes done—the comb in the section will be bent off to one side and built up against the super, and I confess it was two or three years before I found why I had gotten rid of that. The bees would fill it in. If they had a heavy flow they wouldn't do that, but after a light flow the sections near the outside would be filled in. They work the most on the inside, and they would keep turning it over and get near the super. One of the first things that the bees do if you have a bottom starter, if you have a small starter—I have them less than a quarter of an inch between the two starters—and the first thing they do is to fasten the two together, and then cannot be shoved off to one side, so there is a somewhat important point about it there. The thing in a nutshell is, you have it filled up even; it isn't fuller at the bottom or fuller at the corners.

Mr. Hight—How deep is the bottom starter?

Dr. Miller— $\frac{5}{8}$ of an inch.

Mr. Kannenburg—Do the bees leave any passage-way where the starter is connected on either side, sometimes?

Dr. Miller—Yes, they may do that up at the top, up at the upper corner, but in many cases there is no passage-way whatever.

Mr. Kannenburg—They generally will have a passage-way somewhere, or they might leave it in the middle.

Dr. Miller—No, I never saw it. Often they leave no passage-way whatever.

Mr. Wheeler—I have a way that's a little different from some. I use a split section. I split a section right in two, and run the sheet of foundation right through the center of the section, so I have a starter on all four sides, and the center all filled up solid so the bees have no hole to get through, and build out from each side, and when they are finished I have a section all finished.

Dr. Miller—The whole section?

Mr. Wheeler—Yes, the whole section. I let down four halves of the section, then I lay on the sheet of foundation and lay on the other four halves, put in the super, and take another and do the same way. My sections are filled full.

Dr. Miller—Is there ever any sagging?

Mr. Wheeler—No, and I have never had one injured. They are always perfect, and they won't vary half an ounce in weight.

Dr. Miller—You would be in fashion in England.

Mr. Kannenburg—Don't that spoil the looks of the sections after they are filled? Looks kind of split off, and you can't finish it off.

Mr. Wheeler—That's against it. It leads to another point: People see the foundation, and they maybe think it is manufactured. That's the greatest objection.

Mr. Niver—How do you fasten those two halves of the section? Do you let the bees do that?

Mr. Wheeler—Clamp them together.

Dr. Miller—The foundation does it.

Mr. Niver—They will hold until you ship?

Mr. Wheeler—The bees do that. After they are in the hive 24 hours they will hold together perfectly.

Pres. York—It will do it all right. I have seen it many times.

Mr. Chapman—How do you split the sections?

Mr. Wheeler—The factory does that. I buy them that way.

ARE FULL-WEIGHT SECTIONS WANTED?

Mr. Longsdon—Do we want the sections full? I have seen advertised here in Chicago, "Honey wanted, but we don't want it to weigh over so many ounces." I would like to hear from some man who does know how full we want the sections filled.

Pres. York—Do we want full-weight sections?

Mr. Niver—I have quite a lot of experience right there, and it is my experience that the most popular weight to sell

to the grocer is 12 ounces, and that would go in a section $3\frac{1}{2} \times 4\frac{3}{4} \times 1\frac{1}{2}$ inches. It weighs exactly 12 ounces full—fancy honey.

Pres. York—Now, Mr. Muth, I think you would better answer the question. Do you want “full” things down in Cincinnati, or not?

Mr. Muth—I have the honor to have a personal acquaintance and friendship with Frank Rauchfuss, and I think he is the best-posted honey-man in the world. I also had the pleasure of his company for about three days when he was in Cincinnati some two or three years ago, and a circular they issue on the grading of honey, and how they adopt their style meets my notion to the dot. They favor the $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$ section, open top and bottom, and 24 sections to the case—fancy, of course, is always the best. A 24-section case should weigh from 22 to 23 pounds, and no more than 24 pounds. We all go to the limit even if we do advertise long-tongued queens! The retail grocer or the general public is the one that we cater to. What we like may not be wanted by other people. If I want to buy a pound I want 16 ounces. When I sell a man a pound I sell him 16 ounces for a pound, and when I tell a man I will do it, I will do it. A retail grocer will often telephone me, “What have you got?” “I have something that will strike you.” He wants a case of honey that has 24 sections and that weighs 22 pounds. If I tell him I have a case of 24 sections that weigh $25\frac{1}{2}$ pounds he will say, “I don’t want it.” I have that demonstrated to me right along. A man in Iowa sent me about \$275.00 worth. I had forgotten to mention when I told him to let his honey come that it must average less than a pound to a section, or it should not average more than 23 or 24 pounds to the case, but he let it come, and it all averages 25 and 26 pounds to the case. Well, there I am. I am looking for a buyer. I would like to sell it for what I paid for it. I believe they are all like that. I don’t care; if a retail grocer wants light weight, give it to him; or if he wants pounds, give it to him. If he wants light weights, I have it; and if he wants pounds I have it; but the majority want to make a little money, and they don’t make it anyway because they cut prices. They want to get the trade. If they are light weights, about 14 ounces, that strikes a man all right. They look like a pound and they can get 20 cents a piece.

Dr. Miller—Why do they make any more money on one than on the other?

Mr. Muth—Say I buy it by the pound, and I sell to the retail grocer by the pound, and they generally sell by the piece. There is more short-weight honey on the market than pounds, and whenever you have heavy-weight honey on the market you have a proposition. The gentleman that sold me this honey is a very fine one, but if I had known that the honey was heavy weight I wouldn’t have wanted it for three cents a pound less than I paid for it, because it is a drug on the market.

Dr. Miller—If they all weigh alike, why is it that one will

bring a better price than the other? If a section weighs $1\frac{1}{2}$ pounds, wouldn't they be willing to pay for $1\frac{1}{2}$ pounds?

Mr. Muth—No, sir. There are 24 sections in a case, and the case weighs $25\frac{1}{2}$ pounds. The retail grocer will figure out each section will cost him say sixteen cents a pound; if under this weight you could sell for 18 cents a pound, and make about 40 cents on the case; but if he has to pay 18 cents a pound he will have to sell it for 20 cents, and a lady will come in and say, "You sell that frame of honey for 20 cents? I can get all I want for 18 cents." Yours might be so big, and the other so small, it is the same thing, I assure you. Life is too short to talk with people. Give to them just exactly what they want, and let them alone. [Applause.]

Dr. Miller—I would like to ask: These people that buy light-weight sections, do they think they are getting full-weight?

Mr. Muth—No, sir. We are not talking about weights at all. Now, mind you, I am no retailer. If I see a customer come up to buy a pound of honey I am astonished, because none come to me. I am a wholesaler. I am taking the position of the retailer, and I am catering to the retail grocery trade. That's what I suppose you want to know.

Dr. Miller—If I have a 24-section case that weighs 24 pounds can I get as much a pound for that as if it weighed 22 pounds to the case?

Mr. Muth—Yes, that will go all right.

Dr. Miller—Same thing?

Mr. Muth—This man who sent me the \$275.00 worth of honey gets just as much from me, but I wish he had his honey and I had my money. How am I going to get rid of it? I have to stick it on to some fellow that doesn't know anything about it. I am selling by the weight. He is not going to make as much. Maybe I am a little bit too frank with you, gentlemen.

Pres. York—We are not used to it in Chicago! Look out for him!

Dr. Miller—Never mind him. I am from the country. I want to know about that case of honey, the one that's light weight. The light-weight section will bring just as much money as the section that weighs 17 ounces because the people think that they are all just alike!

Mr. Muth—That doesn't give the situation. Say a 24-section case of honey will weigh, 22 pounds. We will say at 15 cents a pound, that would make \$3.30. Now divide that by 24—about 14 cents a piece. He will get 18 or 20 cents for it, and he is going to make a nice profit. But if his case of honey weighs 25 pounds, he has to pay me 15 cents a pound. A retail grocer is not a broad-gauged man, and competition drives him to see money, and he will hesitate a whole lot before he will take an over-weight case of honey when a short-weight case is presented to him, because it always sells by the section.

Dr. Miller—You get just as much for one section as for the other? If a grocer held up two sections before a woman

and said, "There is one that weighs 14 or 15 ounces, and here is another that weighs a pound," would she give the same for one as for the other?

Mr. Muth—No.

Dr. Miller—You have to fool her?

Mr. Muth—No.

Mr. Wheeler—The grocery man don't handle both kinds, don't you know?

Mr. Muth—The dealer caters to the wants of the retail grocer, or to the demand.

Dr. Miller—The grocer wants a light-weight section. Now, does the woman want the light-weight section? And what is she going to get? Which do you say, does she or doesn't she?

Mr. Muth—You can go to any one of these grocers and ask them what kind of coffee they sell the most of. Do they sell the most Mocha and Java, or do they sell the most of Arbuckles?

Dr. Miller—Would you rather drink Mocha and Java?

Mr. Muth—They sell the kind they make the most on. We all like the best, but whether we will pay the price or not is another matter. The retail grocer is in business for profit, and we have to give him just exactly what he wants or he doesn't want it at all.

Dr. Miller—If the woman knows the truth about it?

Mr. Muth—She doesn't know it. They generally fool them.

Dr. Miller—The customers have to be fooled?

Mr. Muth—They get fooled quite often.

Mr. Wheeler—I think there is more to that than that alone. Leave the comb honey out of the question; take extracted honey. Pres. York and I have had a good deal to do with that. We find that a jar holding $\frac{3}{4}$ of a pound sells ten to one where the one-pound jars sell. The grocery man will make his profit out of one just as well as the other. People are looking for a cheaper package. They like to have something around 15 cents. As soon as it is 18 or 20, then they stop buying. The $\frac{3}{4}$ jar sells just as the 15-cent cake of honey does. It ranges between 15 and 18 cents a package. I have found that to be the fact ever since I commenced to sell honey. They want honey around 15 cents—the people that are consuming honey. There is a pound of honey, but the grocery man may stay there all day and they will buy the 15-cent jar of honey.

Mr. Niver—I have been a grocery man nine years of my life, I have sympathy for the grocer, I know why all these things are, and we don't get at the point. The grocery man hates to figure. He can convince his customer that he is honest. It isn't practical in a grocery store to weigh a section and get the different fractions and figure it up, so he guesses at it.

Dr. Miller—Anybody been asking about fractions?

Mr. Niver—Follow my argument. The honey-producers, in order to work off No. 2's and 3's will take a few very heavy sections and mix them with quite a number of light

ones, and it all comes to 22 pounds, and it is a light-weight case, but they are not all alike. The customer comes in and the grocer says, "Take your choice at 15 cents," for instance, and the lady will pick out the best section, as you or I would, and as anybody else would, and the last six to eight are culls. He can't sell them at hardly any price. He doesn't want to handle honey after that. You give him 24 sections of honey that weigh exactly a pound apiece, every one, and he puts it there at 15 cents, the last will sell as well as the first one; but put another case right opposite which weighs $\frac{3}{4}$ of a pound each, and sell them at 12 cents, and the other at 15, the 12-cent will go first. That is human nature. We cater to that idea, and had all our sections to hold $\frac{3}{4}$ of a pound each, and they would retail at 15 cents in those days. The pound sections had to retail at 20, which was the same price per pound, yet it was almost impossible to sell the pound sections while it was easy to sell the others. Another class of trade, we sold No. 2's, 10 ounces each, and they sold two for a quarter, and they went more rapidly than fancy honey because the lady will buy two for a quarter rather than pay 15 cents each. It would go faster than the other for that reason. It is the culls on the last end that is the reason he wants honey all alike, and while he doesn't want a large, heavy case—

Dr. Miller—How much would those culls weigh?

Mr. Niver—About 10 ounces. We sold by count always, and not figures. It is the most practical way, and it gets rid of this talk. Grade your honey correctly. Sell by count, and the grocery man is better satisfied, and it is easier work to sell it.

Dr. Miller—Suppose a section weighs 10 or 12 ounces?

Mr. Niver—I say that is No. 2

Dr. Miller—How would that sell?

Mr. Niver—Per pound the same as the other.

Dr. Miller—How to the customer?

Mr. Niver—Same price for it.

Dr. Miller—No trouble to sell it?

Mr. Niver—No, reasonably more popular honey.

Dr. Miller—How wouldn't it be profitable at the tail end?

Mr. Niver—Because he has to sell it for the same price as the good. Has to pack it good, and put it in the same case. They want to work off their No. steens; they will try to work them off with the good honey, and make the good honey sell the other, and then the grocery man "gets it where the baby wore the beads," when they sell it that way.

Dr. Miller—I notice by the report in the American Bee Journal that the heavy-weights bring about 2 to 3 cents a pound less than the others, and some people have hinted to me sometimes that that was because the grocers want to buy by weight and sell by the piece; with the inference to the customer that each one weighs about a pound, and I couldn't make myself believe that that was entirely honest. They were deceived about it, and they thought they were getting a pound in each section.

Mr. Wheeler—I have sold considerable honey in Chicago this year. They would ask, "How much do your sections weigh?" And I would tell them, 12 to 14 ounces. After that my end of the story is done. Whatever the grocer tells is nothing to me. I told him the truth, and I have no trouble in selling them.

Pres. York—I don't think the customers know very much about the pound section. They buy it as a package.

Mr. Clarke—As to the public buying a box of honey—the general public at the stores where they don't believe and know—they suppose that they get a pound of honey.

Mr. Niver—A man's belief is of no consequence to anybody but himself, and what they believe is none of my business. If I say that piece of honey is worth 15 cents—I didn't tell him it was a pound, or two pounds. Why should he not believe it weighs two pounds? and the same argument was used when we came to one-pound sections. It is not a question of weight. This piece of honey is 15 cents, 18 cents, or 20 cents, as the case may be. Say 20 cents that section is worth. Well, if you want to for an experiment they will weigh it for you, but no grocer can afford to take the time to weigh it all. If you buy an orange, they say the orange is worth so much. Take it or leave it. There is no dishonesty, because there is no claim setting forth that they weigh a pound, or two pounds.

Mr. Clarke—Some of the strongest laws in existence are unwritten laws. I have had lots of experience. A lady sent to two different stores for a bushel of potatoes, 60 pounds. A section-box is supposed to weigh a pound, generally speaking. This lady got 13 pounds short-weight on the one bushel from the grocer who sold by measure, and the other grocer sent her 60 pounds for a bushel. What is the fact? Everybody says now, "B. will swindle you, and the other is honest and will give you what is perfectly right," and I think it holds good in honey as in any other goods. I never have a month go by but what I have somebody come in to buy honey, and I will say, "Well, that section won't average more than 14 or 15 ounces," and the customer says, "Why, I always supposed that was a pound." They are misjudging it because they are no judge.

Mr. Moore—I hate to add anything to this discussion. In my mind it runs back at least 10 years. Dr. Miller has written numerous articles in the bee-papers right along this direct question as to whether it was moral and right to sell pound sections in the way that they are sold in the trade. There is no use in our deceiving ourselves. Fight the devil with fire and tell the truth. There are no morals in business. Very little of it in Chicago business. I hate to say it, but the percentage of the people, take the retail grocery business, who allow their morals to interfere with their business over the counter, is very small in Chicago.

Dr. Miller—Go to Cincinnati for that!

Mr. Moore—It is my conviction, after 17 years of selling honey, and calling on hundreds of grocery stores, there is a dishonest motive back of buying honey by the pound and sell-

ing it by the piece. That's what Dr. Miller has always claimed. I don't claim so because he says so. I would rather be against him if my reason was so, for the sake of my own individuality. Let us not deceive ourselves. People don't know what these sections are called. Everybody, everywhere, knows that they are called a pound section. That is a pound section without any honey in it. You may put in one ounce, or 16 ounces, or 20 ounces, but the lady thinks of a pound when she asks for that. It is a pound section. The grocer has bought 12-ounce sections by the pound, and he sells them by the piece, with the implication that they are a pound, and he gets the pound price for it. Some of the grocers are a little "green," and they buy heavy-weights and sell them for 20 cents a pound. This man is a little bit smoother, and he buys the light-weight and he sells a section for 18 cents, and he makes more than the fellow does who sells them for 20 cents, and the thought came to me whether if we as beekeepers had a duty in regard to selling light-weight sections to the grocers and giving them a chance to make a dishonest profit. Occasionally some of the grocers are ignorant. I went into a grocery store and I saw some 12-ounce sections. I said, "What did you pay for those?" "Why," he says, "I paid 12 cents a pound." I said, "No, you didn't, you paid 16." He wouldn't believe it. "You paid 12 cents a section for it, but the sections only weigh 12 ounces, and that's 16 cents a pound." The position that that grocer was in is the position of the average housekeeper who buys this $4\frac{1}{4}$ square section and thinks it is a pound. I don't know if there is any remedy, and I don't know if it is on our consciences. If we sell our honey honestly, and the grocer thinks he has to deceive his customers, I don't know whether that is our affair. I should like to hear this discussed, whether we should cater to this light-weight section trade which tends to dishonesty.

Pres. York—What does Mr. Moore mean by a dishonest profit? What would be a dishonest profit on a section of honey?

Mr. Moore—Any profit on anything is dishonest which is gotten under deception of the customer.

Mr. Starkey—There is one thing I think we don't all consider, and that is the fact that the more prudent housewife who hasn't an unlimited use of the bank account, or has trained herself to the point where she means to save every cent she can (and it is proper she should, because there are chances when she can), when they go to buy honey or any other thing when they find something for a cent cheaper they prefer to buy it. It isn't because this man has a 16-ounce section of honey that he prefers to sell it; he knows the customers are looking for something that costs less money, and they are willing to take a smaller package, or rather the beekeepers are not supplying the demand for a small-priced article. Now, I know if you put up a 10-cent package of honey, that would be enough to put on the table, and they would sell a great deal of that where they wouldn't sell a 20-cent package; yet a honey-producer cannot afford to put it up that way. The honey-man cannot afford to supply the

demand. It costs too much to put it up and handle it. The grocery man would rather make three cents on a 20-cent package than 2 cents on a 10-cent package.

A Member—That depends.

Mr. Starkey—I believe in this case it will apply. You will grant that you can sell twice as many.

A Member—No, we won't.

Mr. Starkey—There is a demand for something that is not supplied. The grocery-man is just about as honest as any other man. They are trying to deal squarely, but if they find that the customers won't buy 20-ounce sections they get something else. The grocery man is not dishonest.

Mr. Horstmann—There is no need of anybody being dishonest in selling comb honey. Now, I sell both extracted and comb honey. People come to me and ask me the price of honey. I say, "I sell the extracted at 15 cents a pound, and the comb honey at 20 cents a section. I tell them they weigh almost a pound; some weigh a pound and some weigh a little less. We sell it by the section, we don't sell it by the pound; but if you want a full pound, I will sell you a full pound of extracted honey for a certain price and I sell honey in bulk." They bring the jar to buy it in. Anyone can come to me and buy honey, and if he wants a pound he won't get a light-weight section. If he wants the latter I let him have them, if I have them to dispose of. If they sell my honey to somebody else and sell 12 ounces for a pound it is their dishonesty, not mine. I am honest in my sales. I tell them just how much I think they weigh.

Dr. Miller—I am very glad to accept the fact, and I do believe it is a fact, that that argument that a lighter section will sell better is from the mere fact that it is a lighter section; and the one thing that proves it is, that when the change was made from the 2-pound to the 1-pound sections, there was no deception in the weight in either case. The 1-pound section would sell in the market for one cent a pound more, and the only reason was because it was a lighter section; and still with all that, when I tell you that a light-weight case of sections will sell for 2 cents a pound more than one weighing a pound each, I am afraid that is because the grocers expect to sell these with the unspoken understanding on the part of the customer that they are getting a pound section.

Mr. Muth—I don't believe, Dr. Miller, that I am doing something that is wrong. The retail grocers as a whole are honest, and very seldom do you see a sign "20 cents a pound," or "18 cents a pound," when you see section honey. You will find a little ticket on it—20, 18 or 16 cents a comb, but they want to buy by the pound and they want to buy light-weight sections. There is no deception. The only deception is when the bee-keepers stick the dealer on honey that weighs more than a pound! I am talking from the dealers' point of view, and right straight.

Mr. Niver—One point that has not been touched. A 2-pound piece of honey put on the table will go on and off a number of times, and the last few times it won't be eaten,

and it is thrown away. It isn't so bad with the pound section, but a half-pound section will go every time, and they will buy two $\frac{1}{2}$ -pound sections where they will buy only 1-pound section, and they will buy it a great deal oftener. That was one reason why we went down to the $\frac{3}{4}$ -pound section, which is as low as we could make profitably. If we could have made $\frac{1}{2}$ -pounds we would have done it, but you cannot afford to do that. We cut to $\frac{3}{4}$ -pound, and they were very well satisfied. The $4\frac{1}{4} \times 4\frac{1}{4} \times \frac{7}{8}$ were almost unsalable.

GETTING UNIFORM-WEIGHT SECTIONS.

"How can you get sections all to weigh 12 ounces each?"

Mr. Moore—The gentleman here has explained.

Mr. Fairbanks—Speaking of pound sections, I have an uncle in New Hampshire who puts his honey up in half-pound packages, and he has no trouble disposing of them two for a quarter, or 12 $\frac{1}{2}$ cents a piece.

Dr. Miller—What is the size of the section?

Mr. Fairbanks—I didn't pay much attention to that; he worked those altogether, and he said that a man could hardly sell a pound section there. It wouldn't sell nearly so rapidly. It is a great bother and lots of work. I helped him put some together, but I didn't pay much attention to it, as I thought it was too much trouble. I wished since, though, that I had. It is like picking hazel-nuts out of chaff; I didn't think I had any time for it. Let me say, that there wouldn't be any family that would have to put it on the table more than once, because it would be all eaten up.

Pres. York—The question is: "How can you get sections all to weigh 12 ounces each?"

A Member—Can't do it.

Mr. Meredith—Cut out a little piece of the honey!

Pres. York—We would better have the next number on the program now, by Mr. Morley Pettit, of Ontario, Canada. The secretary will read the paper first, and then if we have time we will go on with the questions.

Secretary Moore then read Mr. Pettit's paper, as follows:

ESTABLISHING AND MAINTAINING A PROFITABLE HOME MARKET FOR HONEY.

The matter of markets is one of the most important problems in connection with bee-keeping. It involves different factors, principally buyers, sellers, prices, expenses, and profits. Profits are determined by deducting from the selling price the cost plus the expense of selling. Do not forget the expense of selling. The ultimate buyer is the consumer, and the sellers are any or all of three: retailers, wholesalers, and producers.

The producer expects a price for his product which will pay interest on his investment in bees, fixtures, etc.; will pay running expenses of the business, and a good profit on the time and muscle and brain work which he may devote to it. The wholesaler and retailer must each also make a paying profit.

Like all other problems in connection with bee-keeping, that of establishing and maintaining a home market is a subsection of the question supreme from a business standpoint—How to secure the best profits or the highest returns for the investment of money, time and brains. In the matter of selling his product, shall the bee-keeper become wholesaler, or retailer, or both, or neither? If he is neither, he may put his honey up in large packages and sell to a few firms, possibly only one. He has few packages to fill and handle, few sales to make and few shipments. This requires small expense of money and time, and time is money. Let me repeat, time is money! Always money to those who do not lack either health or ambition to attain the highest business success. To sell to the wholesaler direct, then, cuts down the expense account. It has this advantage: It also brings a low price because the other two sellers must have their respective margins. It sends more honey to the large cities and tends to reduce the retail price there. If it leaves a shortage at home there is a double loss. Does the advantage counterbalance the disadvantage? Every man must answer for himself.

If the producer becomes wholesaler he saves the latter's profit to himself, provided his reputation is good and he knows enough to ask the right price. He also keeps the honey nearer home, avoids the glut of large city markets, and saves freight-rates. On the other hand, more time must be spent in canvassing for sales, putting honey up in smaller packages, and collecting small accounts.

When the producer becomes retailer the price is again increased, and usually also the expense. The small producer may be fortunate enough to sell his entire crop at the house with little expense. Further sales must be made by a house-to-house canvass. This takes time and travelling expense, but honey is thus taken into houses where it might never be used, and the increased consumption and gain in price will probably pay for the extra expense. The farther one gets from home in retailing honey the greater the expense, until a point is reached where the expense eats up the profit and wholesaling must be resorted to. In this also a point is reached where it will pay to ship the balance to wholesale firms or commission men in the large cities. These are a few of the points to be considered in deciding how best to dispose of the honey.

The home market depends largely upon the bee-keeper himself. He must put up a uniformly good article at a uniform price. Supply honey in whatever form the trade demands, but use every effort to educate people to buy it in the cheapest form, that is, extracted honey granulated, in tin, wood or paper. Push the sale of large, cheap packages. Do not sell a pound bottle, hoping that the next order will be a 10-pound pail. Families will take a 5-pound pail every Saturday when, if shown a 2-pound package, they would probably cut down their weekly order to that. Last season a local dealer showed in his window a 60-pound cake of granulated white-clover honey, having removed the tin with a can-

opener. The honey was cut in squares and sold by the pound, wrapped in paper like butter or cheese. This season he is selling granulated honey for me again, but it is in Aikin honey-bags. These prove a good seller where people have learned that the granulated form is the natural and most palatable condition of honey in cool weather. Every bee-keeper should be an educational institution disseminating knowledge in his neighborhood and beyond. He should teach the nature and habits of honey, and its value as both food and medicine. By all means strenuously strive to reduce the cost of production and marketing, and maintain the price.

I have omitted detailed instructions which may be found in text-books and bee-papers; but I would say to bee-keepers who personally meet the consumers of your honey: Struggle against this pernicious habit of reliquefying honey, and putting up in expensive bottles. Show them that granulated honey in its natural state, is attractive and palatable, and is more apt to be pure.

A point which I would like to bring up particularly for discussion is this question: How to meet the competition of small producers who do not know the value of their product nor their time. They think to gain advantage by cutting a cent or two from the price. Then we must either meet that, and the result is all lose a cent per pound, and *no more honey is sold*, or else let them have the retail trade and sell wholesale, when there is a general lowering of price. Of course, the remedy is local organization, which is slow and difficult, or a local "corner" which is expensive and well-nigh impossible.

To establish a home market is commendable, in that it promotes the universal distribution and consumption of honey. It is also expensive; but with the coöperation among honey-producers necessary to their highest success it will certainly pay.

MORLEY PETTIT.

Pres. York—The paper is now before you for discussion.

Mr. Abbott—We hear a good deal said about the middle man. This is an age in which they are trying to eliminate the fellow in the middle. All sorts of societies and organizations are trying to get rid of the middle man. He is a fellow who lives in the city, and pays big prices for help and rent, and sells goods on small margins. It just occurred to me that he was the man to encourage to get rid of having the market spoiled. Here is this fellow in every city who handles honey. The fellow who comes in and doesn't know the price, he hasn't the time, and if he had he hasn't the adaptability. This is an age of the divisibility of labor. In a watch factory one man makes one wheel, and another man makes another, and every man makes his wheel all right. There isn't a man that can make a whole watch, and they do that because they get better results that way; and so with the fellow selling. I am now handling comb honey, and I don't want to be in business for fun. A man came into my place along in the season and

he says, "What's honey worth?" I said, "That depends on the character of it. I am not buying it, but it ought to bring a good price because there is a small crop, and if I had honey I would get a good price for it." He said, "I have been around the city retailing mine. I have got a wagon-load, and I have been retailing it at 25 cents—two pounds for 25 cents." I said, "My dear, sir, are you a candidate for the lunatic asylum? Are you giving away your labor like that? If you have the honey, and it is the kind you say, drop the whole business right down here and I will give you a check, and I will sell every bit, and I would just as soon have a little of your money as somebody else." He says, "If that's the case, I will take my honey home." He would better have sold it to me and let me make 2½ cents than to have peddled it around the city destroying the market for a lot of other people. Don't you think the middle man would have been an advantage? The producer could take his ready cash and go home. He seemed to be glad to go home, and not have to go to the trouble of peddling it, because he didn't like that kind of work. We make a mistake about these things. The man who sells honey, the man who starts from Cincinnati and rushes to Baltimore, and rushes to Florida, and down to St. Louis, and then to Chicago, if he is selling barrels of honey he is making a market for you and me, and we want to stop this talk about killing out the middle man. [Applause.]

Mr. Wilcox—I have been to this convention ever since it opened and I don't recall any talk about killing off the middle man.

Mr. Abbott—It wasn't this time.

Mr. Wilcox—I once belonged to the Farmers' Alliance, and we talked middle man there. I don't believe the bee-keepers of the country are trying to injure him. They are looking after the industry in general, and we all recognize the fact that all classes are necessary. It is impossible to kill off the middle man.

Pres. York—I think they would die awfully hard if you tried it.

Mr. Wilcox—I have seen men try awfully hard. You go to producers to buy their honey and they will say, "What do you make?" And you tell them you make half a cent a pound, or more, and they will say, "You can't have it," and they send it to Chicago to the commission man and pay him 10 per cent. What I got up to say is, that we are not unfriendly to the middle man, and not unfriendly to the supply man, and not unfriendly to any class of dealers or producers, but we wish to promote the general welfare of all.

OBJECTIONS TO THE T SUPER.

"Are there any special objections to the T super? If so, what are they?"

Pres. York—Dr. Miller doesn't know any objections to it.

Dr. Miller—I do. It is in four pieces, and if you are not careful you will have those four pieces scattered around and step on one of the T tins and smash it, and if you don't

handle them exactly right, and somebody doesn't know about handling it, the whole thing will fall out and smash your sections; and there may be others.

Pres. York—Why do you use it, then?

Dr. Miller—Because I don't know of anything else as good!

Mr. Wilcox—I have studied that from Dr. Miller's writings. I have made and used a good many of them, but I couldn't make others use them just as he did. In making mine I made the T support solid, fast to the super instead of loose, so it couldn't fall out. It requires accuracy of measurement, and accuracy in size of measurements, and to secure them I made the super myself, and I always buy my sections at the same factory where they are made at practically the same gauge, then I can slip them in and they fit, and they always fit and remain.

Mr. Abbott—There won't anybody buy it down in my country.

A Member—I had three or four hundred, and I changed them over into the section-holders. I had a great many reasons why I didn't like them.

Pres. York—But you have forgotten all about the trouble.

Mr. Niver—I think we have about 500 of them there at home, and they are fine for kindling the fire under the steam.

Mr. Abbott—I didn't know tin would burn.

Pres. York—It does down in New York! It gets hot down there!

Dr. Miller—I want to mention just one thing in regard to Mr. Wilcox. If the T tins are fastened on (and there are others who do that), then there is not the objection to falling out. The only reason I like the support is because then I can take the whole thing out at one time, T tins and all, and there is a little advantage in that. One very serious objection

to the T super is, a great many people don't know how to use them!

Pres. York—There is a book published on that subject!

Dr. Miller—Many.

HONEY CROP OF THE UNITED STATES FOR 1903.

"Is the general honey crop of the United States for 1903 above the average?"

Mr. France—Possibly I have had through the correspondence of the members of the National an opportunity to learn of that, and I will say it is below an average, take the United States as a whole.

Mr. Abbott—Right.

CLOSED-END FRAMES.

"What are the good points in a closed-end frame?"

Pres. York—How many use the closed-end frame, or have used them? [Eight.]

Mr. Wilcox—One good point is, the space would be properly spaced while the combs were being filled. After the combs are filled I don't care for them any more.

Mr. Abbott—They didn't have any good points is the reason I quit using them.

Dr. Miller—They are fixed distances, and they are warmer; but I wouldn't have them.

Mr. Wheeler—I wouldn't have anything else. That's just the difference.

Mr. Wilcox—You ought to know the good points.

Mr. Wheeler—When you want to shake bees out, stick the end of your hive against the ground and you don't knock your frames all out of true.

Dr. Miller—You are not talking about the closed-end. It may be closed-end and hanging too.

Mr. Wheeler—I am talking about the closed-end and hanging.

Mr. Muth—I suppose that is another one of the articles that was made for the wings of some of the people. Every man I sold those closed-end hives to has thrown them away. They don't like them. Too much paraphernalia connected with them. I tried them a couple of years and don't want them.

Mr. Wheeler—I am glad of it. I can produce honey and beat the other fellows because I have shorter cuts. We can produce honey cheaper with that hive than with any other.

REVERSIBLE FRAMES.

"What is to be gained by the use of reversible frames?"

Pres. York—How many use reversible frames, or have used them? [Seven.]

Mr. Baldrige—I have used them but don't use them now.

Mr. Wilcox—I have now perhaps several thousand of them in use. They are made of the pattern described by Mr. Heddon. They are reversible. I can't say that I would advise everybody to start with them, because it costs a little more to start with. If a comb breaks loose, or in handling falls to the bottom-bar, you can reverse it, and it will sit on its bottom again and the bees will build the spaces full. That's one of the advantages. Sometimes they do break that way. Another advantage, that wedge-shaped piece on each end extending below the center some two inches leaves the space between the end of the frame and the end of the hive tapering narrow at the top and wider at the bottom, and I find it as Mr. Heddon said, that the bees would never build brace-combs behind the lower end of the brood-frame while the top may come as close as a quarter of an inch. I think that is a little advantage in moving out on the hive. That is only, however, peculiar to the one form of reversible frame and not to the principle.

Mr. Wheeler—Do you mean to say that that is the Heddon reversible hive?

Mr. Wilcox—Heddon reversible frame; hanging Langstroth. Heddon was the inventor.

WHITENING COLORED HONEY-VINEGAR.

"How can you make colored honey-vinegar white?"

Mr. Muth—The only thing to make white honey-vinegar is to use white honey from the beginning.

Mr. Wheeler—Mr. Meredith has one way of making vinegar white. He puts horse-radish in it!

Mr. Meredith—The distilled vinegar is white vinegar, but in the process of manufacture it is all a wine color, and it is reduced to its whiteness by some process, and there might be somebody here who has had experience in making honey-vinegar. If so, I would like to know it.

Dr. Miller—Follow up what is in the British Bee Journal. They make dark honey white by means of electrical machines and using ozone? I should think that would be expensive, but they say it isn't. First, to make the dark honey light you put the lightning through your vinegar and make it white. I don't know anything about it in practice, but they say it is really an inexpensive process, but I very much doubt its being a success.

Mr. Muth—In the large pork-packing establishments they clarify lard. They use all kinds of refuse to make lard, and they have fullers' earth that they clarify with. They put it in the lard, and the darkness will all settle to the bottom. In all the big establishments they clarify their products, and make them white as snow.

Mr. Meredith—At Aurora a process is used to a large extent in packing-houses, where they use the refuse and the putting on of this earth, and putting it through a press, brings it back to the whiteness which it was before it became dirty. It is done by means of a hydraulic press—pressed through cotton with pressure of 250 to 500 pounds. It is simply a matter of cleaning out the refuse and bringing it back to its original color.

Mr. Chapman—The packing-houses don't care to get the fuller's earth out of the lard! I presume in this case we would like to get rid of the fuller's earth.

PRODUCER'S NAME AND ADDRESS ON HONEY.

"Is it advisable for producers of comb honey to put their name and address on each section when shipping to a city dealer?"

Mr. Meredith—Yes, and no. As a producer I sell honey and somewhat object to anybody—I would object to shipping my honey to anybody that refused to have my name on it. I ran short and my neighbor Jones had some. The people who are buying my honey want Meredith's honey, and I had to clean off Jones' name; where I hadn't done so, they wanted my name on the honey.

Mr. Wilcox—The reason for putting it on there is to advertise it. That is the only reason, and we all wish to advertise our honey. The buyer who gets it may wish it to sell, and may want his name on instead of yours, and he will have to cut yours off. I am selling extracted honey and I sometimes run out and have to buy. I buy the best I can. I don't like to buy the poorest. If the man I buy from, and I order him to ship to you, and he has his name on there, you will write right back to him for some more of just such honey, and I would lose a customer. I would rather do without the profit on that honey. I have lost a customer by allowing that

man to stamp his name on the package. I would lose a great many sales rather than buy from a man who would stamp his packages.

Pres. York—He might have his name on the box.

Mr. Muth—I don't want anyone's honey with his name over the sections. I will do that myself. We work hard to get customers, and I am just as jealous of my business as I can be, and if I develop a trade I don't want you to come in and take my trade. I have spent a life-time for it. I don't want a producer's name on every section. They can put it on the end of the case if they want to, and if I see fit I can scratch it off. Nine times out of ten it comes off, but when the name is all over the sections I don't want it. A good many times I feel like saying, "The honey is here subject to your order."

Mr. Horstmann—I don't think it is right for bee-keepers to have their names on the sections. I don't think it is honest. If I sell a case of honey to a dealer, that honey belongs to that dealer, and I claim that my name has no right on the sections. If I am an honest bee-keeper, and want to be fair, I should leave my name off. I can stick half a dozen, or a dozen cards in the box, and if he wants to advertise me and my business he can do so; but I say, Keep your names off the sections when you sell to the trade. If I am selling honey to people in my own neighborhood, I would put my name on the sections, and also when people come to my house to buy honey. I should advertise my business as much as I can, but I have no right to advertise my business at the expense of somebody else.

Mr. Kannenburg—It seems like that is trying to kill off the middleman!

Mr. Meredith—I have sold to merchants who required that my name be put on.

Pres. York—They held you responsible for it then.

Mr. Abbott—This means a little more, too. I think sometimes the names ought to be cut off of the honey. I hate to buy a thing with the company's name stamped all over it. I have thought sometimes, as a dealer, that I would quit handling those grades of extractors—A. I. Root Company's, and others—because the trade belongs to me; I have to put in my hard licks for it, and I think there is too much advantage taken of us fellows who handle supplies. When I began selling supplies in St. Jo, you couldn't have sold a wheelbarrow or the cheapest hive which was \$2.75, and now I can sell four or five carloads, and I have done it all myself. I want an extractor, and here comes an extractor with A. I. Root all over it, and the minute the customer gets it he writes to A. I. Root to find out what I got it for.

Dr. Miller—This whole thing is simply a matter of contract, and there is no trouble about it at all. If I make a trade with a man, before the trade is completed we must both agree to it. If I want to sell some honey to a man, if he says he wants my name on it, and if he will pay me enough for putting it on, I will do so. If he doesn't want it

on, I am willing to leave it off. There are cases like Mr. Meredith says, where men will want the name on, but the majority of cases don't want it, and if you don't want to sell to a man of that kind, don't sell to him. You are not obliged to. This thing of saying the middle man is dishonest because he scrapes the name off—you are off, decidedly. As to the matter of articles like extractors, etc., the man that puts his name on, put it there for the sake of advertising, and the man that buys it buys it with that understanding, and it is a fair thing. They don't always put it on. You will find that on some of these things the manufacturer's name is not on. You will find a Singer sewing machine having Montgomery Ward's name on it, or a Fairbanks' scale will have some prominent farmer's name on it. It is an understanding of bargain and sale. I wish we could get rid of the idea that there is any dishonesty going on. We will go through life happier if we believe that there are honest men—and outside of Cincinnati, too!

Mr. Meredith—In putting on horse-radish, according to law, I am compelled to label the contents of that jar.

Pres. York—You must mention the *contents* on the label, not your own name.

Mr. Meredith—If it is a combination of horse-radish and vinegar.

Dr. Miller—Are you compelled to put your own name on?

Mr. Meredith—I must put my own name on together with the contents of that bottle.

Mr. France—That part is simply to protect the public in view of the pure food law in case of adulteration, that the inspector may know where to go.

Mr. Baldridge—Wouldn't that apply, though, to section honey? To oblige them to stamp it?

Mr. Wilcox—If there is such a law in Illinois. There is not in Wisconsin, and I can't understand how they can enact such a law. It certainly must apply to food products.

Pres. York—Comb honey isn't a manufactured article.

Mr. Wilcox—There might be a statute applying to manufactured food products.

WHY USE 8-FRAME HIVES.

"Will Dr. Miller please tell us why he uses 8-frame hives?"

Dr. Miller—As nearly as I can tell the principal reason is because I have them. One great reason, a very strong reason with me—it wouldn't be a strong reason with everybody—but if you were an old man as I am expecting to be within the next fifty years, and you had no help except a weak woman, you would want things as light as possible. That is a strong reason in favor of that hive; it is light to handle. Another reason is, I think, I can get more comb honey with the 8-frame hives than with the larger size.

HOW TO SUCCEED IN THE BEE-BUSINESS.

"How can I succeed in the bee-business? To be answered by Dr. Miller."

Pres. York—You could probably answer it better if you knew who it was, Doctor.

Dr. Miller—If the questioner will raise his hand I will look him over and tell him.

Mr. Longsdon—I didn't ask it, but I want to raise my hand.

Dr. Miller—You get a bee-book, and read that carefully, and study it through, and learn all you can from it, and then get another bee-book, until you get several. But, of course, above all get "Forty Years Among the Bees!" It is one of the best books in the world! Then get a bee-paper, and some of the best bee-papers of the world are published in the United States; and don't take foreign journals. Then attend conventions, and then go home and work it all out. Try carefully, watch your mistakes, and talk it over with your wife!

Mr. Johnson—And get some bees!

Dr. Miller—Oh, yes, get some bees. And when you have gone that far you will see through for yourself; and if you don't, call on me and I will tell you the rest!

Mr. Wheeler—Mr. Muth would say, "Get a long-tongued queen!"

LICENSE FOR SELLING HONEY.

"If I sell all my honey, and buy more to sell, am I compelled to get a license?"

Mr. Abbott—If he lived in Missouri he would have to get a license.

Mr. Moore—That's a question that perhaps I can answer. It depends largely upon the laws of the municipality, or town, or city. I believe 12 or 13 years ago they made me pay a license in Ft. Wayne. The general rule is that taking orders and delivering afterwards puts you in the class of commercial travelers. The only question would be in some town or city where it was the rule. It is a question to look up in your locality what the law is. If you don't peddle there is no license required, in general.

BEE-KEEPING IN ILLINOIS AND INDIANA.

"Does it pay to keep bees in Illinois or Indiana?"

Dr. Miller—Illinois, I think. Is the question which of the two States?

Pres. York—It means the two States.

Mr. Abbott—Anybody knows it pays in Illinois. Look at this crowd and the clothes they have on!

Mr. Duff—I don't think there would be many that would have very much clothing on if they depended on bee-culture!

Dr. Miller—I believe the question is entitled to a fair

and honest answer. Take simply the matter of the profits from bee-culture alone, and I believe there are very few men that would make it a paying business. I believe a few who have a special aptitude might, but if a young man came to me in regard to his choice of a business for making money, I believe 19 out of 20, if not 99 out of 100, can make more money out of any other business.



GEORGE W. YORK, President.

Mr. Longsdon — Then you were making a fool of me a little bit ago?

Dr. Miller—No, I wouldn't of *you*. Did you ever go fishing?

A Member—Yes.

Dr. Miller—Did you make a success of it? I caught three fish. I counted it a big success, but I didn't make any money at it.

Mr. Londgsdon—You mean a financial success?

Dr. Miller—In the bee-keeping business a lot of success comes just from the fun you have in it. There is hard work, and a lot of enjoyment. I don't know of any other business that you will have as much enjoyment studying out problems. You have gone to bed studying out problems, and when you are gray-headed you will still be studying out problems that way. It is a paying business in that way. It is an enjoyable business. I will give you one reason why I count it a profitable business, even if you have to have something else to go along with it to make your living: There are a great many men, thousands of men in this city to-day, men who have a great deal of wealth, and are working hard, and they are counting on the day when they will be able to lay business aside and go into the country and enjoy life; and nearly every one is looking forward to the time when he can take things easy. I am going fishing every day. I am having fun every day at bee-keeping. I am having a good time as I go along, and that's one of the reasons I can keep on at the bee-keeping and make less money because I don't need to look forward to the good time by and by. I am having my good time right now. Again, a man could do it in Illinois or Indiana with no other object in view except making money. Then I say it is doubtful if he can count it a very profitable business in either of these two States.

MAKING AND SELLING HONEY-VINEGAR.

Pres. York—Some want to hear from Mr. Muth on the manufacture and sale of honey-vinegar. How is it done? And is it profitable?

Dr. Miller—Give us the last answer first and then maybe we won't care to hear the rest.

Mr. Muth—It pays if we can develop the trade, just like developing a home-trade for your honey. I made four or five barrels of honey-vinegar two or three years ago. I told my good wife, "Well, this is pin money for you, and if anybody wants honey-vinegar you can sell it to them at 40 cents a gallon." The first barrel we gave away to the neighbors. I told my wife to talk about it. We gave away a barrel of honey-vinegar, the finest in the world. I never had anything like it. Well, I believe some of the neighbors came in for two cents' worth. But I would rather let somebody else develop that trade. Years ago my good father made lots of honey-vinegar. I recall on Freeman street. our lot ran down about 140 feet on one street and about 50 or 60 on another. We occupied a corner lot. Early in the spring we put out barrels and barrels of honey-water for vinegar, and by August we had the finest vinegar you ever tasted. In those days we had a retail grocery, and the people were coming and going, and we gave them a sample of honey-vinegar once in a while, and thereby developed a wonderful trade in that line, and it created a trade that took it all for 40 or 35 cents a gallon; and it also created a trade

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among the rich nabobs on the hills at 35 cents a gallon. It can be done if you have the people coming in. I have no retail store. I am a wholesome man, and people don't come to my store. It can be made, and if I had a little retail store, and had bees where I lived, that would be one of my hobbies. I would knock out a profitable time having fun making honey-vinegar and selling it at 40 cents a gallon.

Mr. Wilcox—How much did you put in?

Mr. Muth—The more honey the better. Put 3 pounds of honey to a gallon of water; or if you put in 2 pounds you will get good vinegar. If you put in 4 pounds you would get the finest on earth; but I would call it about 15 or 20 cents a gallon cost.

Mr. Wheeler—Did it ever get too sweet?

Mr. Muth—No, the sweeter you get it the sourer it will get.

Mr. Wheeler—I have had it stand around in barrels and not ferment.



HERMAN F. MOORE, Secretary.

Mr. Muth—If you would make your honey-water real sweet, put in a little cake of yeast and it will ferment.

Mr. France—If you make it so very sweet it will ferment quicker, and be stronger, and it will eat your pickles. The housewife prefers vinegar that is not so strong.

Mr. Muth—I agree with you. Take about 3 pounds to a gallon, and that's a whole lot.

Mr. Wheeler—Did you ever try it after your honey was heated to the boiling point?

Mr. Muth—I did not.

Mr. Wheeler—I have had honey, the melting from cappings, the honey gets hot. I have had a great deal that was unfit to sell—water and honey that ran out of the wax-extractor. I have tried all sorts of ways to get that to sour, except by adding the yeast. I have put in the "mother of vinegar" even.

Mr. Muth—That ought to work. In the first place, have a vinegar-barrel or a wine-barrel, a barrel that fermentation has gone through. A whisky barrel won't do so well. It should be a vinegar or wine barrel. Bore two holes at the top of the ends. I take a piece of tin for each hole, and punch holes in the tin. Lay that aside until you put the honey-water in. After that is in, put it in a place where it can stand from spring until summer. Then put the honey-water in, and nail on the tins, rough edge up. The reason of that is to keep the little gnats and such things from getting into the barrel. That's all there is to be done. Use rain-water; no well-water.

Mr. Arndt—How does he clarify the vinegar? I have three or four barrels, and it is not quite in condition to market, and I have more orders than I can fill. The reason is that my vinegar is not quite sour enough yet, and I have sold out all that was marketable, and there is a demand. I can sell any quantity of vinegar in Chicago. I could go out to every customer and sell 500 gallons of vinegar in two or three months, but it costs so much to put it in jugs and ship. It is the cost of marketing.

Dr. Miller—How much a gallon?

Mr. Arndt—50 cents, including the jug.

Mr. Meredith—The clarifying of vinegar is done by packing a barrel with beech-shavings procured from a vinegar manufacturing company of this city. In connection with their works they have what they call the roller system of the manufacturing of vinegar—the roller presses, where the particles of vinegar or sweetened water come in contact with the air most often. I have also made a German vinegar still, where the air circulates from the bottom, and circulates through as the particles of sweetened water are dropping down, and then a pump brings it to the top, so that I have produced good vinegar from sweetened water in eight days. I think the quick process of making vinegar would be quite a help if they want to get into the detail of manufacturing vinegar in a small way. Take a barrel that will hold 165 gallons of liquid. Pack the shavings. Arrange the air-vent and the means of distributing the water through. Roll the barrel half over at different intervals, and it continually goes down through the shavings by what is called the quick process of manufacturing vinegar. Here the air goes through the barrel by allowing it to pass through.

Mr. Arndt—Is vinegar made that way just as good as that which takes two years to make?

Mr. Meredith—The manufacture of vinegar is the formation of acetic acid due to the changes that the vinegar comes to by the process of coming in contact with the air. Perhaps some others can give more information on that matter.

Mr. Arndt—My vinegar, although it is very sour, they can eat it by the spoonful and it never gags them.

Mr. York—It is very good vinegar, but most of the honey-vinegar is made in less time than two years.

Mr. Meredith—Vinegar can be bought in the Chicago market anywhere from 4 to 40 cents a gallon; and if they can manufacture good vinegar for that amount of money there must be some quick process.

Dr. Miller—Pres. York may be well enough satisfied with Mr. Arndt's vinegar, but Mr. Meredith has given the thing necessary—the exposure of the liquid to the air. When you have a barrel with a hole in it and perhaps a bottle in that hole, there is no chance for the air to get at any of that except the surface, and the air is coming in slowly; when it passes down through the shavings there is a very much larger surface. Take that barrel of sweetened water—liquid honey—and put in a small quantity. Put it in a shallow dish and that will sour very much quicker. The change will be much more rapid than if it were in a large body with only a small surface exposed. The shavings are the same thing. Every shaving is a surface when wet with that liquid. There would be, probably, in a barrel of shavings, I don't know how many square feet; the same amount would be exposed that there is in a great many barrels in the ordinary way, so that the chemical change can go on very rapidly, and that is all there is to it; and I don't see why the rapid change will be any detriment, and why it wouldn't make just as good vinegar one way as the other.

Mr. Abbott—The Doctor touched a good idea. If you will set out a small dish it will sour, and take that full of microbes and ready to go to work, and the barrel will sour quicker, too, and the microbes get to work. Get enough started and it will work.

Mr. Duff—And those microbes only get those conditions favorable to growth on account of the temperature. It must be 80 degrees, Fahrenheit.

Dr. Miller—You cannot sour ice.

Mr. Duff—You know that.

Mr. Meredith—A vinegar still, in a cheap form, consists of a barrel—you also need a faucet. Fill up one-third full with corn-cobs. Before that there is a hole bored so that the air will pass down, and the liquid from the top would pass down and up without going out. I made mine from shavings of basswood, and filled that up to the top. On top of that was set a tub that had a small hole bored through the bottom, with a string. That was the thing. In the center there is a two-inch tube so as to allow a passage of air to go down through these holes in the side of the barrel, and then up through this tube, and charging the still was done by saturating the entire corn-cobs and shavings with cheap vinegar.

Mr. Abbott—I suppose you all know that the cheapest vinegar is not made by fermentation. The white vinegar isn't vinegar really at all. It is made by a chemical process, and is far inferior to ordinary vinegar made in the family, and it is a question whether it is injurious or not to the health. The general opinion, I believe, is that it is, but the manufacturers are forcing it on to you all the time. You

can hardly get pure cider vinegar made by fermentation, and that's the advantage of honey-vinegar.

Mr. Johnson—The matter of fermentation is by ferments and germs, and it is the same way if you can a jar of fruit. If no air gets into the jar it is impossible, but as soon as a little air gets into the jar, fermentation takes place, because it is the same as the oxygen that gets into the barrel. The more surface you have the more microbes you get, and they could be at work on that and fermentation would take place much faster, and, besides, the degree of 98 Fahrenheit is the favorable degree for any kind of fermentation.

Mr. Meredith—I would like to say that the cheap vinegar, or white wine, as it is generally called, is given the name of distilled, and I also understand that the pure grades of malt vinegar are worth 40 cents, and they are also distilled, so that if they can manufacture one and both by the same process—fermentation—why can't they by some other means?

Mr. Wheeler—One word of warning to you people. I have used, I suppose, a barrel of honey trying to make vinegar, and I have taken the recipes I have read in the bee-papers for making that vinegar, and I have wasted my honey. If you want to try it, try it on a small scale, and find out what you can do.

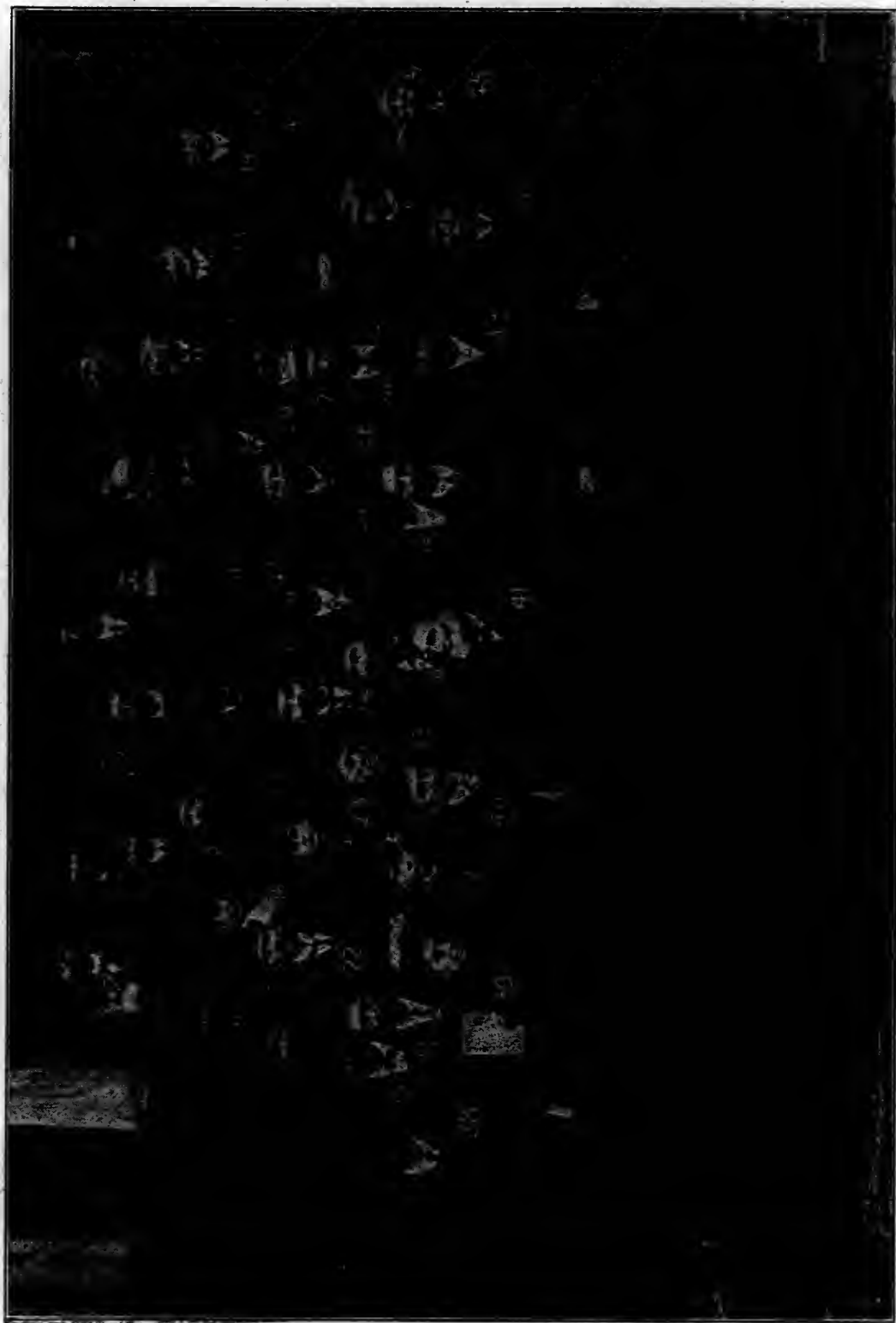
Mr. Meredith—I accidentally made a gallon of vinegar superior to any I ever had, and I tried making a quantity and I couldn't get it as good. I sent it over to my brother-in-law and he thought it was very good sour wine.

Mrs. Stowe—Can you make vinegar with sour honey?

Dr. Miller—Sure; it is that much on the way.

Pres. York—I am sure this is the largest closing session of the Chicago Northwestern Bee-keepers' Association I have ever seen. I want to congratulate you on what I think has been a successful meeting. It has been on account of the interest you have taken in it, and the promptness with which you have taken up the questions. I thank you all for your courtesy in bearing with me as President. I have tried to do my best, and it seems that everything has worked so that we have had a grand time. I trust you all feel that way. We now stand adjourned until the call of the Executive Committee, probably in a year from now.

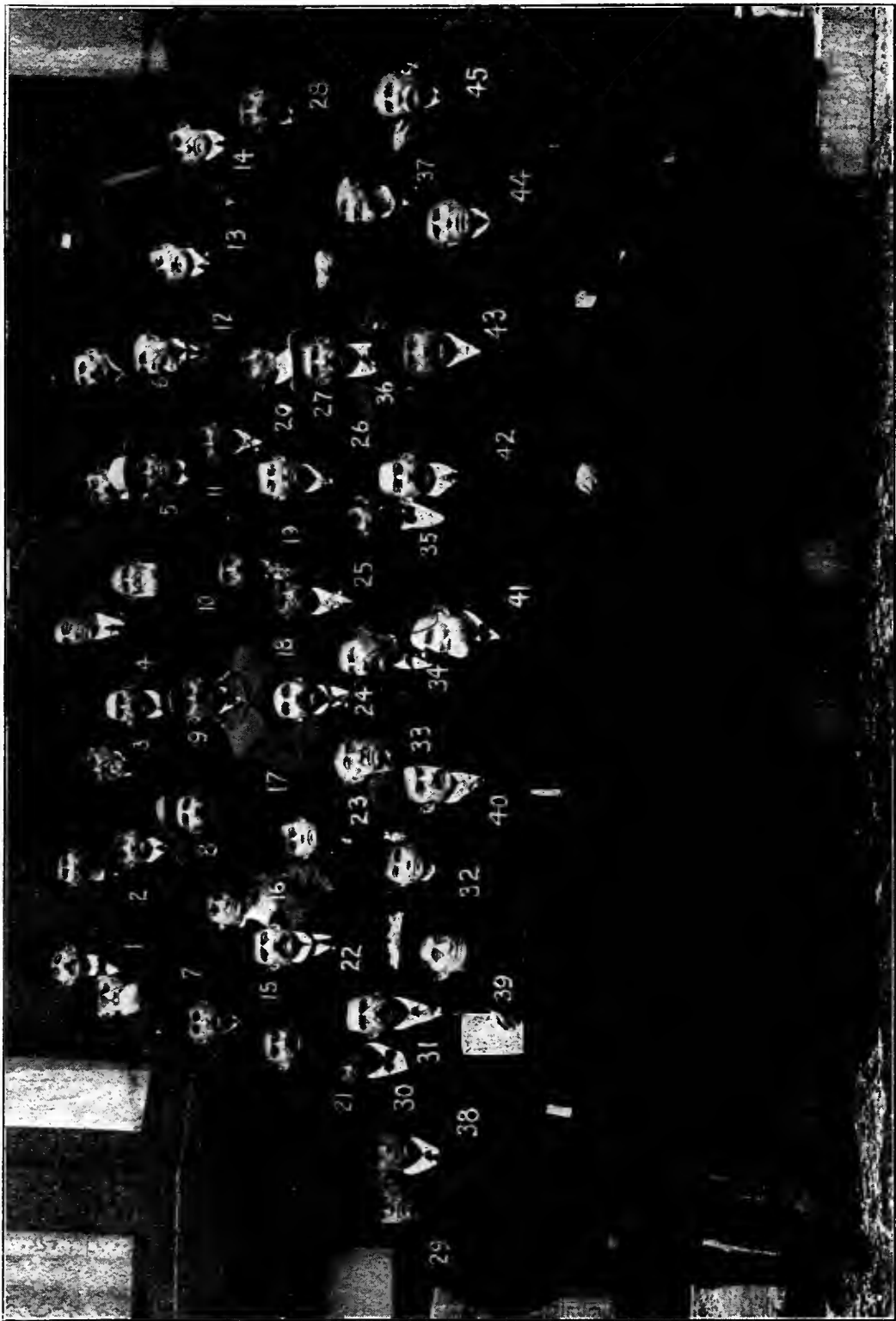




Part of the Chicago-Northwestern Bee-Keepers' Convention,

(Held in Chicago, Dec. 2 and 3, 1903.)

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4. E. F. Tiedt	15. W. C. Lyman	26. Leonard S. Griggs	37. M. M. Baldridge
5. T. J. Tough	16. Mathilde Candler	27. J. H. Gerbracht	38. Lester Barr
6. W. W. Falconer	17. Jno. F. Longsdon	28. L. M. Gilbert	39. Mrs. N. L. Stow
7. T. E. Hogge	18. Frank Coverdale	29. C. W. Finch	40. George W. York
8. S. A. Niver	19. Mr. Barkemeter	30. Arthur Stanley	41. Dr. C. C. Miller
9. D. Benton	20. C. A. Fairbanks	31. N. E. France	42. Rev. R. B. McCain
10. F. Wilcox	21. J. C. Wheeler	32. Miss Florence Caldwell	43. W. H. Horstmann
11. J. E. Thompson, Sr.	22. Herman F. Moore	33. Wm. M. Whitney	44. Chas. Anderson
12. Wm. Duncan	23. Miss M. A. Caldwell	34. J. Q. Smith	45. John Dutnall
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MRS. N. L. STOW, Vice-President,
Chicago-Northwestern Bee-Keepers' Association.

Foul Brood and Other Diseases of Bees.

[Continued from page 32.]

use of all drugs in the treatment of foul brood as a useless waste of time and material, wholly ineffectual, inviting ruin and total loss of bees. Any method which has not for its object the entire removal of all infectious material beyond the reach of both bees and brood will prove detrimental and destructive, and surely encourage the recurrence of the disease." In Wisconsin I have tried many methods of treatment, and cured some cases with each method, but the one that never fails, if carefully followed, and that commends itself, is the McEvoy treatment. Canada's foul brood inspector, has cured foul brood by the wholesale—thousands of cases.

MCEVOY TREATMENT.

"In the honey season when the bees are gathering honey freely, remove the combs in the evening and shake the bees into their own hives; give them frames with comb-foundation starters and let them build comb for four days. The bees will make the starters into comb during the four days and store the diseased honey in them, which they took with them from the old comb. Then in the evening of the fourth day take out the new combs and give them comb foundation (full sheets) to work out, and then the cure will be complete. By this method of treatment all the diseased honey is removed from the bees before the full sheets of foundation are worked out. All the old foul-brood combs must be burned or carefully made into wax after they are removed from the hives, and all the new combs made out of the starters during the four days must be burned or made into wax, on account of the diseased honey that would be stored in them. All the curing or treating of diseased colonies should be done in the evening, so as not to have any robbing done, or cause any of the bees from the diseased colonies to mix and go with the bees of healthy colonies. By doing all the work in the evening it gives the bees a chance to settle down nicely before morning, and then there is no confusion or trouble. This same method of curing colonies of foul brood can be carried on at any time from May to October, when the bees are not getting any honey, by feeding plenty of sugar syrup in the evenings to take the place of the honey-flow. It will start the bees robbing and spread the disease to work with foul brood colonies in warm days when the bees are not gathering honey, and for that reason all work must be done in the evenings when no bees are flying.

"When the diseased colonies are weak in bees, put the bees, two, three, or four colonies together, so as to get a good-sized colony to start the cure with as it does not pay to spend time fussing with little, weak colonies. When the bees are not gathering honey, any apiary can be cured of foul brood by removing the diseased combs in the evening and giving the bees frames with comb foundation starters on. Then also in the evening feed the bees plenty of sugar syrup

and they will draw out the foundation and store the diseased honey which they took with them from the old combs; on the fourth evening remove the new combs made out of the starters and give the bees full sheets of comb foundation and feed plenty of sugar syrup each evening until every colony is in first-class order. Make the syrup out of granulated sugar, putting one pound of water to every pound of sugar, and bring it to a boil. As previously stated, all the old comb must be burned or made into wax and so must all new combs made during the four days. No colony is cured of foul brood by the use of any drug."

A. I. Root, of Medina, Ohio, says: "The starvation plan in connection with burning the combs and frames and boiling the hives has worked the best in treating foul brood. It never appeared after such treatment, though it did in some cases where hives were honey-stained and not boiled, thus confirming the theory or fact of spores."

All the difference from the McEvoy treatment that I practice is this: I dig a deep pit on level ground near the diseased apiary, and after getting a fire in the pit such diseased combs, frames, etc., as are to be burned are burned in this pit in evening, and then the fresh earth from the pit returned to cover all from sight. Often I use some kerosene oil, a little at a time being poured on old brood-combs or those having much honey in, as they are hard to burn. If diseased combs with honey in are burned on the surface of the soil there is great danger; the honey when heated a little will run like water on the soil, and in the morning the robber-bees will be busy taking home the diseased honey that was not heated enough to kill germs of foul brood.

I also cage the queen while the bees are on the five or six strips of foundation. It helps to keep the colony from deserting the hive and going to other colonies.

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In Wisconsin, I, too, have cured several cases by the one transferring, when honey was not coming in very freely, but it is better, and a great saving of time to both bees and owner, to exchange in three or four days those foundation starters, for full sheets of foundation. Diseased brood-combs, and those with honey in, if melted in a sun or solar extractor, the wax, honey or residue is not hot enough to kill germs of foul brood. This I have proven by several experiments. It must be boiled and well stirred while boiling to be safe.

I do not believe in, or practice, burning any property, such as hives, bees, beeswax or honey that can be safely treated and saved. Many times it is poor economy to save all, and as so many bee-keepers are not so situated as to keep all diseased material from robber-bees while taking care of it, the best and only safe way is to burn the diseased combs and frames.



Roof-Apiary of G. E. Purple, of Cook County, Illinois.



Apiary of S. T. Crim, of Sangamon County, Illinois.

and they will draw out the foundation and store the diseased honey which they took with them from the old combs; on the fourth evening remove the new combs made out of the starters and give the bees full sheets of comb foundation and feed plenty of sugar syrup each evening until every colony is in first-class order. Make the syrup out of granulated sugar, putting one pound of water to every pound of sugar, and bring it to a boil. As previously stated, all the old comb must be burned or made into wax and so must all new combs made during the four days. No colony is cured of foul brood by the use of any drug."

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UTAH.

Utah has county inspectors, and from one who has remarkable success I copy the report of his method of treatment:

"Wherever found, it should be dealt with earnestly and with dispatch. If the colony is weak, I recommend smothering the bees, and in order to do this without letting a bee escape, take a tablespoonful of sulphur and place it in the entrance of the hives, if there is any breeze, turn the hive so it will blow in the entrance. Then fire the sulphur and it will soon kill the bees. This should be done early in the morning before any of the bees are flying, as one bee escaping from the hive might carry the disease to any colony with which it may take up its abode. If the colony is a strong one, I would keep the entrance partly closed so as to prevent any other bees from getting in. Then as soon as fruit-blossoms come out so the bees can obtain honey I treat them. I procure an empty box of any kind so it is clean, then find the queen, put her in a screen-wire cage which is easily made. Take a small piece of screen, roll it up and tie a string around either end, cork up one end, then place the queen and a few workers for company in the cage and place in the other end cork. Put same in this box and shake all the bees out of their hive into the box. This must be done in the evening when no bees are flying. Keep the queen in this box 24 to 48 hours, allowing the bees to fly in and out as they please. Next take a clean hive with good, healthy combs or foundation and shake bees into it, letting the queen go and they will be free from disease. The old combs are melted into wax, bringing same to a good boil. Often washing with boiling water any hives or implements that might contain disease. Wherever strictly followed this has effected a cure."—C. Wilcox, Emery Co., Utah.

PICKLED BROOD.

Some seasons pickled brood is quite bad among bees, and in a few cases I have known it to reduce large colonies, even large apiaries to doubtful hopes, but those same colonies, after I gave them treatment, were in a month free from all disease. Sometimes it takes as careful handling as if foul brood. I do not believe it is contagious, for all I have seen is 60 colonies in one apiary badly reduced by it. As an experiment one of my out-apiaries had 50 colonies at one time with pickled brood. I treated them and all were soon free from dead brood. At the same time I took 10 of the worst brood-combs where at least two-thirds of the brood was dead, and placed those combs in other strong, healthy colonies. They at once cleaned out the dead brood and reared as nice brood as one could ask for.

SYMPTOMS.

The larval bees (in last of May and through June) show light-brown spots, a little later the cappings have small holes in—the cappings are not sunken or dark-colored as in

foul brood. The dead bee will be at first swollen, with a black head, dried to a hard bunch and often turned up—Chinaman-shoe like. The skin of the dead bee is quite tough, and, if punctured, the thin, watery fluid of the body will flow as free as water, often a little yellow or brownish-colored from the dissolved pollen from the abdomen of the bee. It has very little or no smell, does not at any time stick to the walls of the comb, is easily pulled out of the cell, is never ropy or sticky, and if the colony is properly cared for, the bees will take care of themselves. Plenty of liquid, unsealed honey and pollen near the brood, and hives so protected as to keep bees and brood comfortable on cold days and nights.

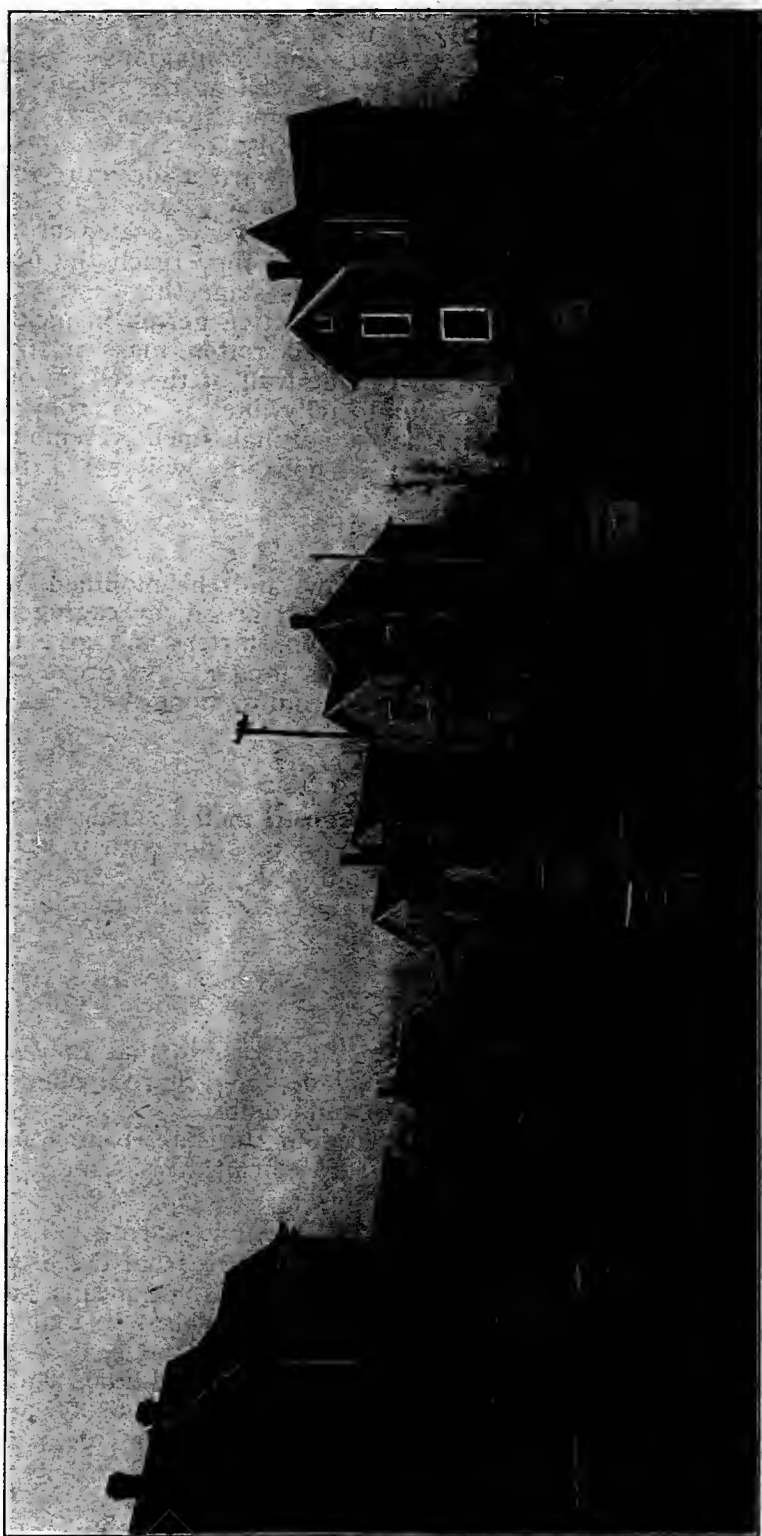
Never put bees on old black brood-combs, or those with dead brood in; better make wax of the combs and give the bees full sheets of brood-comb foundation.

TREATMENT.

Keep all colonies strong, with plenty of unsealed honey near the brood, and if hives are properly sheltered so as to be warm on cold days and nights there will be little or no pickled brood. If the queen is old, shows weakness by putting several eggs in one brood-cell, and nursing several others, so that the brood is patchy, I would kill such a queen, feed the bees a little, and when queen-cells were started, remove them all and give them a queen and bees, between two of her own brood-combs from a hive where she had lived. I do not think pickled brood is often the fault of the queen, but rather a lack of proper food and heat in the hive. In most cases a shortage of liquid honey, or moldy pollen, even in hives with plenty of sealed honey in the outer combs. There is a time in spring in Wisconsin between dandelion and white clover bloom when there is no honey coming in from flowers and often cold days and nights so that the live bees consume the liquid unsealed honey first, and cluster in a compact body to keep warm, the result often is the larval bee just changed from the egg to a tender little grub, is either starved, half-fed or chilled so that it grows slowly and too often dies, and we first notice this about the time white clover honey begins to come in. In other parts of the State, where pickled brood appeared it was from the same cause, and at other dates, which was due to a difference of time of honey bloom.

Wherever I fed daily some honey or even sugar syrup, and kept the hive warm, all dead brood soon disappeared; while in the same apiaries other colonies affected and not so treated, continued bad for some time, but got rid of it as soon as treated.

Strong colonies of bees in the fall with a young laying queen, and an abundance of good honey sealed or capped by the bees, if properly cared for during winter whether in the cellar or in chaff hives, wintered out of doors in sheltered location, seldom have pickled brood, chilled or other dead brood, or dysentery, and are the colonies that give their owner profit.



Apiary of W. P. Turner, of Peoria County, Illinois.

BLACK BROOD.

Black brood is another fatal and contagious disease among bees, affecting the old bees as well as the brood. In 1898, 1899 and 1900 it destroyed several apiaries in New York. Last year I found one case of it in Wisconsin, which was quickly disposed of. Dr. Howard made more than a thousand microscopical examinations and found it to be a distinct form of bacteria. It is most active in sealed brood. The bees affected continue to grow until they reach the pupa stage, then turn black and die. At this stage there is a sour smell. No decomposition from putrefactive germs in pickled brood. In black brood the dark and rotten mass in time breaks down and settles to lower side-wall of the cell, is of a watery, granulated, syrupy fluid, jelly-like, is not ropy or sticky as in foul brood, and has a peculiar smell, resembling sour, rotten apples. Not even a house-fly will set a foot upon it.

TREATMENT.

Best time is during a honey-flow, and the modified McEvoy plan, much as I have treated foul brood, by caging the queen five days, remove the foundation starters and give full sheets, keeping queen caged five days longer. As great care should be taken of diseased hives, combs, honey, etc., as in foul brood.

DYSENTERY.

Dysentery among bees in Wisconsin in the spring of the year, often is quite serious. Many colonies die with it. Dysentery is the excrements of the old bees; it is of brownish color, quite sticky and very disagreeable-smelling, and is sometimes mistaken for foul brood.

CAUSES.

1. Bees confined too long in the hives, so that they can no longer withhold their excrements, and are compelled to void the same on the other bees and combs.

2. Poor winter stores gathered in the fall from honey-dew, cider-mills, sorghum mills, rotten fruit, also some kinds of fall flowers.

3. Old and especially moldy pollen or bee-bread.

4. Hives too cold or damp. If moisture from the breath of the bees is not carried out of the hive by some means, such as through a deep cushion of some kind over the bees that will absorb moisture and at the same time retain the heat, or by some means of ventilation, so that all is dry and comfortable. If mold forms on the combs or cellar so damp as to form mold, there is great danger the bees will have dysentery and die.

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1. First of all, have an abundance of combs of sealed clover or basswood honey in brood-frames carefully saved,



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2. If in the fall the bees have gathered this unwholesome honey from the above-named sources, it should all be extracted and either exchanged for those honey-combs, or feed the bees good honey or sugar syrup until winter stores are secured. This should be done before cold weather in the fall.

3. Hives contracted and made comfortable, whether in cellar or outdoors.

4. If wintered in chaff hives outdoors with feed as above directed, and there come one or two warm spells during winter so that bees can have a cleansing flight, they will not have dysentery or dead brood, and will be much stronger when clover opens.

If wintered in the cellar the bees will not need as much honey, and if the winters are generally long with doubtful warm spells, the cellar will be best. But to keep the bees from dysentery, so often fatal to cellar-wintered bees, they should have such winter stores as above spoken of, then the cellar kept at a uniform temperature, about 42 deg. F., ventilated so the air is fresh, and no mold will form in the cellar. Fresh air-slacked lime on the bottom of the cellar may help if it is damp or has poor air.

5. Dysentery will not appear if bees are kept on sugar syrup, or best-grade white clover or basswood honey, and are in a dry place, either sheltered by cellar or chaff-hive.



FORMALDEHYDE EXPERIMENTS.



Formaldehyde, by the medical experts, is now considered the best of all disinfectants; I have great faith that we may yet learn its use, and save infected foul-broody combs.

Mr. C. H. W. Weber has conducted some valuable experiments. Early in 1903 I decided to do some experimenting, having inspected several infected apiaries. We got a carpenter with well-seasoned lumber to make some perfectly airtight boxes to hold brood-frames, two tiers deep, as per the photograph herewith. Mr. Weber's lamp was used in several trials. Where we used a greater amount, and longer confined than instructions called for, the combs with all cells unsealed, containing dried scales of foul brood, after fumigating and airing were placed in hives with bees on them. The chemical action was such that the bees at once cleaned them out, and no signs of disease has appeared in them since. But in those combs having honey or pollen in the infected cells, or those capped over with brood underneath, they were so covered that



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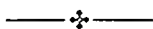
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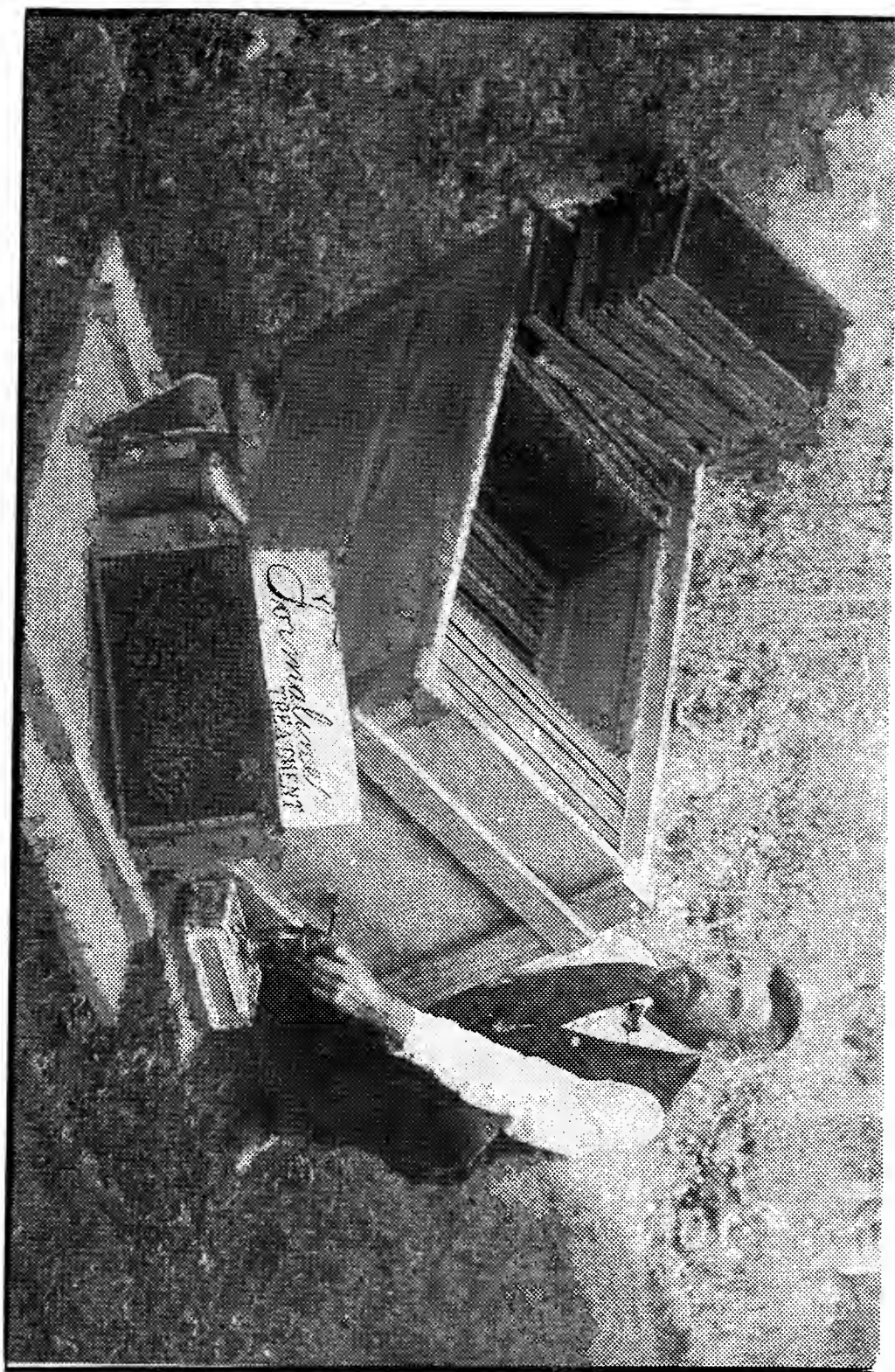


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the gases did not destroy the disease, for those treated July 27, in 41 days each of those combs had foul brood again.

To prove that the gases do not go through wax-cappings, I took some healthy hatching brood, fumigated it, then took it out and cut away the cappings, and some of the bees had life enough to crawl.

I believe we should go slow and do careful experimenting. I know old, diseased combs are worth more rendered into wax, or those containing honey or pollen in infected combs are not safe to use again. A sheet of comb foundation is worth far more. I believe it is possible, if *carefully* done, to fumigate infected combs where there is nothing over the disease, so that those combs can be saved.

Platteville, Wis., March 17, 1904. N. E. FRANCE.



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